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Medical Times

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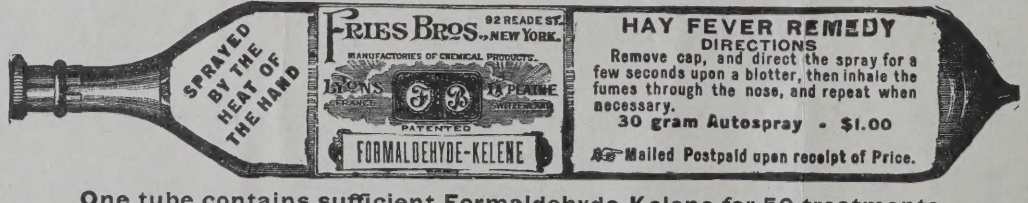
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SELECTIONS

The American Gastro-Enterological Association. This society held its ninth (tenth, counting the organization meeting in 1897) annual meeting in Boston, on June 4 and 5, 1906. The president, Dr. H. W. Bettman, of Cincinnati, to establish a precedent, alluded only to the main points of his address, "The Mutual Obligations of the Surgeon and Internist in the Proper Development of Gastric Surgery." He held that the prognosis in gastric ulcers, etc., under medical treatment, has been represented by surgical writers as far worse than the facts justify and that, on the other hand, surgeons should be more conservative in making diagnoses without due medical consideration of cases and that some had claimed too much for the immediate and remote results of operation. Many of the subsequent participants gave brief oral abstracts of their papers, which will be published in full according to the choice of the writers and the whole assembled into the bound volume of transactions.

Max Einhorn, of New York, spoke on Banti's disease, reporting favorable results from the use of X-rays in reducing the liver and spleen. In the discusison, it was stated that Banti himself had declared that Osler had totally misconceived the disease and had included various other conditions in his extensive collation of cases. One of the members called attention to the mathematic improbability that any extremely rare symptom-complex deserved to be considered as a true disease entity.

S. J. Meltzer, of New York, reported some experiments on the Reflexes Controlling the Peristaltic Movements of the Œsophagus. Some former contradictory reports were harmonized by the observation that, in the divided œsophagus, the persitaltic wave passed from one section to the other under light anæsthesia, not under deep anæsthesia. In many, the time of deglutition was about 7 seconds. Fluids introduced directly into the œsophagus or even as little as 1 c. c. of air introduced rapidly, into any part of the œsophagus, will produce peristalsis.

Franklin W. White, of Boston, reported various cases of achylia gastrica, emphasizing the rather frequent occurrence of the condition, if the definition is not made too strictly, and its frequency as a functional disturbance, with good prognosis. His statement that HCl did not relieve the condition was dissented from by two or three members, although the impossibility of curing an organic achylia was admitted.

Henry F. Hewes, of Boston, reported three cases of hyper- (super-) secretion associated with hepatic sclerosis, to illustrate the fact that such conditions did not necessarily depress the function of the stomach.

A. L. Benedict, of Buffalo, touched upon certain points in a paper dealing rather completely with the kidney in gastro-enterology. Movable kidney, Bright's disease, chemic abnormalities of the urine, etc., were referred to. The first seemed to be especially frequent in digestive practice, but was not connected with any special disease and often the digestive symptoms seemed to be purely symptomatic.

During the noon recess, Dr. E. G. Cutler entertained the association and guests at the University Club, serving a characteristic New England menu, including clams, doughnuts, beans and cider. Apparently, none of the digestive specialists allowed their theoretic knowledge of alimentary hygiene to interfere with their enjoyment of the luncheon.

John A. Lichty, of Pittsburg, presented a Further Consideration of the Gastro-Intestinal Disturbances Associated with Migraine. Seventy-three cases had been reported in 1903. While migraine was not considered definitely associated either as cause or effect with any one digestive disturbance, the necessity of relieving the digesitve condition present was emphasized.

Dr. Julius Friedenwald, of Baltimore, discussed the Influence of Rest, Exercise and Sleep on Gastric Digestion, exhibiting charts showing the acidity, amount of chyme, etc., in several cases. In normal individuals, the three factors produce very little influence. Generally speaking, either violent exercise or sleep inhibits digestion. In patients with either super- or sub-acidity, rest, not sleep, after a meal, tends to restore the secretion to the normal. On the contrary, in patients with motor disturbances, moderate exercise after a meal is best.

A. D. Kohn, of Chicago, read a paper on Appendicitis Larvata, with illustrative cases, showing that the appendix may be responsible for neurasthenia and various vague alimentary conditions.

S. W. Lambert's paper on a Case of Pyloric Stenosis in a Child of Five Years, was read by title, in the author's absence.

Harry Adler, of Baltimore, read a paper on Gastric Ulcer in Childhood. The condition is quite rare, many pædiatrists having never met with a case. Cancer developing upon an ulcer in patients below the age of 19 was unknown. Tuberculous ulcer, however, is less rare in children than in adults, Holt reporting 5 cass in 119 tuberculous children.

J. C. Hemmeter, of Baltimore, under the title of Recent Studies in the Diagnosis of Gastric Ulcer, spoke of the difficulty of diagnosis between biliary lithiasis and ulcer, even hæmatogenous jaundice being occasionally present in the latter, and described an X-ray method of diagnosis depending upon the fact that bismuth adhered closely to the site of an ulcer and thus produced a shadow persisting 6-24 hours after its ingestion, the shadow being darker than for the general gastric area, even soon after the bismuth was taken. This method had been evolved from studies of experimental ulcer. Radiography sometimes succeeds when fluoroscopy fails. Complete failure had also been noted even in experimental ulcer.

F. H. Murdoch, of Pittsburg, reported the Subsequent History of 32 Cases of Chronic Gastric Ulcer. Two died, one from aneurysm of the aorta, one from recurrence of the ulcer; 20 were cured, 4 much improved, 3 not improved, and 3 were not heard from.

W. B. Cannon, of Boston, demonstrated the movements of the intestine and stomach in a cat, anæsthetized, with the spinal cord destroyed up to the phrenic nuclei, and with the abdomen opened under warm salt solution. The antiperistalsis of the proximal portion of the large intestine was especially well shown.

A report of a case of Hyperplastic Colitis, by Morris Manges, of New York, was passed by title. In this case, the entire colon, upper portion of the sigmoid and four inches of ileum had been extirpated.

C. D. Spivak, of Denver, presented a paper of Habitual Constipation, pointing out that the use of more concentrated food tended to establish a less frequent normal evacuation and that many patients were injured by cathartics given under the old rule that a daily evacuation should occur.

A dinner was held at the Vendome in the evening. The president, Dr. W. H. Bettmann, of Cincinnati, and the Secretary, Dr. Chas. D. Aaron, of Detroit, were re-elected. Four new members were elected, the total membership being now about 40. This organization has always been extremely conservative in admitting members, nearly a hundred applications having been rejected. The next meeting will probably be held at Atlantic City, preceding that of the American Medical Association.

Breast tumors, especially in the early stages (*Am. Jour. Surg.*), not seldom fail to present the classical signs by which their malignancy or non-malignancy may be determined clinically. In all cases where the diagnosis is doubtful, a specimen of the tumor should be removed for microscopic study, before undertaking a radical operation.

A tender, painful swelling just at or beyond the upper, outer border of the breast, and near the edge of the pectoralis major (*Am. Jour. Surg.*), is usually an inflamed lymphatic gland. In its presence it is well to look for some skin infection about the waist line, *e. g.*, furuncles, which are not rare at this site as a result of irritation by the corset. *Per contra,* with a boil, abscess, dermatitis or other infection at or above the waist line, one may be on the lookout for glandular enlargement at the point referred to.

A swelling in the parotid region is not necessarily a part of the parotid gland (*Am. Jour. Surg.*). It may be infection of the pre-auricular lymphatic gland. Such an enlargement may be associated with herpes of the forehead, or, sometimes, it may be part of a chain of tuberculous lymph glands.

In all operations in the left subclavian triangle of the neck (*Am. Jour. Surg.*), the location there of the thoracic duct must not be forgotten.

When performing external urethrotomy without a guide it is often possible to trace the continuation of the urethra proximal to the opening, by means of a filiform bougie, even when all devices failed to secure the introduction of a filiform before the operation (*Am. Jour. Surg.*). If a filiform cannot be thus passed through the urethral wound, suprapubic pressure on the bladder may demonstrate the location of the urethral orifice by the escape of a drop of urine or by bulging of the membranous urethra.

An excellent ointment for the treatment of boils (Int. Jour. of Surg.) is that recommended by Bulkley. It consists of carbolic acid, 5-10 grains; fl. extract of ergot, ½ dr.; starch, 2 dr.; zinc oxide, 2 dr.; and ung. aquæ rosæ, 2 oz. It is spread upon the centre of a moderately thick layer of absorbent cotton, several times the size of the inflamed area, and secured with strips of adhesive plaster. This dressing can be left on for ten or twelve hours.

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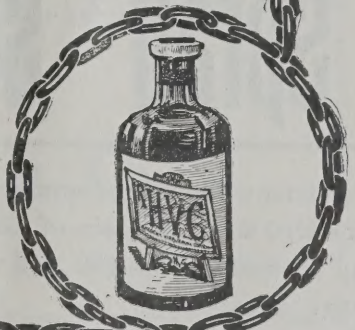

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Contains the Essential Elements of the Animal Organization—Potash and Lime;

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The Tonics—Quinine and Strychnine; (each fluid drachm contains the equivalent of 1-64th grain of pure Strychnine).

And the Vitalizing Constituent—Phosphorus; the whole combined in the form of a Syrup with a Slightly Alkaline Reaction.

It Differs in its Effects from all Analogous Preparations; and it possesses the important properties of being pleasant to the taste, easily borne by the stomach, and harmless under prolonged use.

It has Gained a Wide Reputation, particularly in the treatment of Chronic Bronchitis, and other affections of the respiratory organs. It has also been employed with much success in various nervous and debilitating diseases.

Its Curative Power is largely attributable to its stimulant, tonic, and nutritive properties, by means of which the energy of the system is recruited.

Its Action is Prompt; it stimulates the appetite and the digestion, it promotes assimilation and it enters directly into the circulation with the food products.

The prescribed dose produces a feeling of buoyancy, and removes depression and melancholy; hence the preparation is of great value in the treatment of mental and nervous affections. From the fact, also, that it exerts a tonic influence, and induces a healthy flow of the secretions, its use is indicated in a wide range of diseases.

This preparation can be procured at all chemists and druggists, everywhere.

2 Quick Shakes

of your syringe into which you have drawn 5 or 10 minims of clean cold or warm water and dropped one of our almost instantly soluble hypodermic tablets and you ***at once*** have a limpid, neutral, unirritating, ready-to-safely-use solution of definite because assayed standard strength and purity. If you want to time the solution of our tablets use

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A quick eye is also very essential.

There ***must*** be a reason why our hypodermics are the most popular among the most particular physicians.

Ask your busiest confrere—or if you prefer

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SELECTIONS

The United States Civil Service Commission announces an examination on July 5-6, 1906, to secure eligibles from which to make certification to fill vacancies in the position of hospital interne (male) under the Isthmian Canal Commission, on the Isthmus of Panama, as they may occur. As an insufficient number of eligibles to meet the needs of the service resulted from the examination held on December 6-7, 1905, for this position, qualified persons are urged to enter this examination. Men only will be admitted to this examination, for which two days will be required. Each applicant for the Isthmian Canal Service will be required to submit to the examiner, on the day he is examined, a recent photograph of himself, taken within three years, which will be filed with his examination papers, as a means of identification in case he receives appointment. An unmounted photograph is preferred. The date, place, and name of examination, the examination number, the competitor's name, and the year in which the photograph was taken should be indicated on the photograph. Age limit, 20 to 30 years on the date of the examination; salary, $100 per month, with quarters, but without board and washing. Only graduates of reputable medical schools, having not less than a three years' course will be admitted to this examination. Applicants should at once apply to the United States Civil Service Commission, Washington, D. C.

Too Strenuous.—We are often told that we live in a progressive age. It is certainly a restless and impatient age. Are progress and impatience synonymous terms? We are told that contentment means indolence and decay, and that discontent is the motive power of ambition; the keynote of success. Even the man with time to kill wants to kill it at a mile-a-minute pace. It's a matter of habit. This spirit of unrest is in the air. If we are on a train that is due to arrive in the city at 9.30 p. m.—too late for the theatre, too early for bed—we are as impatient to get in on time as if the few minutes we might be late were eating into the valuable working hours of a business day. It is foolish to live so fast; it wastes fuel; it means loss in the end.—*From "Vest Pocket Confidence," in Four-Track News for May.*

In hydrocele the base of the tumor is below, in spermatocele it is usually above (*Am. Jour. Surg.*). A milky fluid obtained by aspiration usually speaks for spermatocele.

The first application of

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in itching and irritable conditions produces a feeling of comfort to the sufferer never before experienced.

It is the standard remedy for Eczema and acute inflammations of the skin and muco cutaneous margins, and is a superior dressing for Burns, Boils, Skin Abrasions and superficial wounds and sores.

IT IS THE RECOGNIZED SPECIFIC FOR PRURITUS ANI, ITCHING PILES, ETC.

As a nutrient Soap for the Skin

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is without a parallel.

It nourishes the underlying tissues, prevents congestions and eruptions, obviates waste and atrophy, thus preventing wrinkling and cracking of the skin. It is superior to all others for the Hair and Scalp.

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Specify MERCK'S on your prescriptions for **MORPHINAE SULPHAS**

THERE IS NO SUBSTITUTE FOR IT

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DYSPEPSIA, GASTRITIS, GASTRIC ULCER and CONTAGIOUS DISEASES of the STOMACH and INTESTINES.

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Prepared only by

Charles Marchand

Chemist and Graduate of the "Ecole Centrale des Arts et Manufactures de Paris" (France)

57-59 Prince Street, NEW YORK.

SELECTIONS

"WHEN TH' FEVER'S IN TH' BLOOD."

Ain't fel right pert fer a week er two;
Been sorter cranky an' restless an' blue;
No p'tickler reason, es I ken see;
Can't find enythin' specially wrong wi' me;
Jes' don't feel frisky an' don't wanter do
A goldarn thing thet I don't hev to;
Food don't taste jes' 'xactly right;
Sleep is kinder broken up at night;
Don't wanter set still, an' don't wanter walk;
Don't wanter keep quiet, an' don't wanter talk;
Nothin' t' hinder me from doin' jes'
Th' very thing thet 'll suit me bes';
Yet when I'm doin' jes' what I wanter to,
I find it's jes' what I don't wanter do.
Now I wonder
What's th' matter
Wi' me, by thunder?
'Tain't fever, sure—fer my heat ain't riz;
'Tain't biliousness; ner rheumatiz;
'Tain't my head, fer I think right smart;
'Tain't my liver, ner yet my heart;
'Tain't stomach, ner gout—then goldarn me
'Tain't nothin' at all, es I kin see.
En yet it's somethin'—guess I'll go
An' see th' doctor; he'll sure know.

Seems to' me I remember this very same thing
Come on about this same time las' spring;
An' th' doctor doped me with nasty stuff
By th' gallon, an' I bought drugs enuff
T' start a store; but Lordy, they
Couldn't drive that gnawin' inside away;
Somethin' jes' a-gnawin' at my innards—th' same
Symptoms thet I hed when th' las' spring came.
Gosh! what's th' use o' seein' th' doc?
He aint' got nuthin' et all thet'll knock
This here trouble thet allus comes
When th' birds all sing an' th' honey bee hums;
When th' ice breaks up, an' th' streams all roar;
An' th' soft air blows through th' open door;
When th' vi'lets come, an' th' grass blades sprout,
An' th' sun gits warm, an' th' buds break out;
Lemme tell you this—when th' world gits green
An' a feller gits ornery, restless an' mean,
Thar ain't no doctor in eny place
Es kin properly diagnose his case.

The on'y cure fer a man I know
Is t' git right out o' town an' go
Where th' wil' ducks swarm an' th' geese go by,
An' th' trout an' bass are a-jumpin' high;
Th' on'y thing thet'll cure him then
Is t' git away from his feller-men,
An' loaf all day by some laffin' stream,
An' fish an' whistle an' sing an' dream,
An' listen t' birds an' bugs an' hear
Th' voice of the woods in his eager ear,
An' smell th' flowers, an' watch th' squirrels,
An' cast a fly where th' eddy whirls,
An' fergit that there's cities an' houses an' men.
Fergit thet he's got ter come back agen.
Fergit, when on moss-grown bank he's curled,
Thet thar's enythin' else in th' whole wide world
But jes' him, an' th' birds' an' th' bugs an' things
Thet live right thar where th' wild stream sings.

—*The Outing Magazine* for April.

Independent Medical Journals. You can't wipe out the independent journal without getting the permission of the independent editor and the independent doctor, its reader. There will be things for him to say, wrongs to right, excesses to be abated, injustice to be fought, reforms to be advocated—till medical science has been swept off the footstool by the triumphant dominion of the millennium. And—we have something to say ourselves. So long as we believe that Medicine still falls short of the high ideals that are hers, of the possibilities in the healing and relief of the sick which are within her reach, we shall fight, FIGHT, FIGHT!—for a truer and a better therapy, one which shall deserve the confidence of every doctor and which will eventually come to its own—is coming to its own right now.—*Am. Jour. Clin. Med.*

The American Mosquito Extermination Society has issued its Year Book for 1904-1905, containing the Proceedings of the Second Anti-Mosquito Convention, held in New York, Dec., 1904. Henry Clay Weeks, of Bay Side, L. I., New York, is secretary.

K.&O. DOUCHE FOR THE APPLICATION OF GLYCO-THYMOLINE TO THE NASAL CAVITIES

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FOR

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Nasal, Throat

Intestinal

Stomach, Rectal

and Utero=Vaginal

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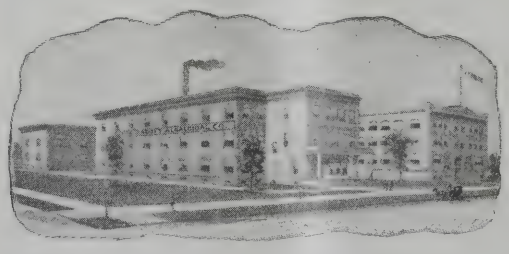
The tide to quackery, and self-medication may be successfully stemmed if the regular physician will do more earnest, more exact, and more optimistic work—if he will enlarge the scope of his operations—and in no other way.

Legitimate pharmacy is with him if he will, and there is no reason why manufacturing pharmacy, the servant of both doctor and druggist, should be allowed to use the facilities that the profit on your business has enabled it to erect, to make "dope for quackery" (and at a price at which it will not sell the doctor or the druggist even the drugs purported to be used) to the direct detriment of both professions, as many of the great commercial pharmaceutical houses are now doing.

Doctor, it rests with you. The remedy is in your hands, and if you cannot control local conditions, your recourse is to know what to buy, and to buy and dispense for yourself. It is your professional duty, your inalienable right, to protect yourself and your patrons.

Just let this "Sort 'o Sink into your soul."



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The Abbott laboratories were established by doctors for doctors. Our ready-to dispense alkaloidal (active principle) preparations and other definite success-making specialties, the highest type of modern pharmacy, meet every requirement! IN NO WAY DO WE AID OR ABET QUACKERY IN ANY FORM,

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Valentine's Meat-Juice

In the Treatment of Diseases of Children, the **Concentrated, Rapid Blood-Making Nutrient,** Valentine's Meat-Juice, is extensively employed, owing to its Ease of Administration and Assimilation, its **Power** to **Sustain and Nourish,** and its Acceptability to the Stomach **when Milk and other Foods are rejected.**

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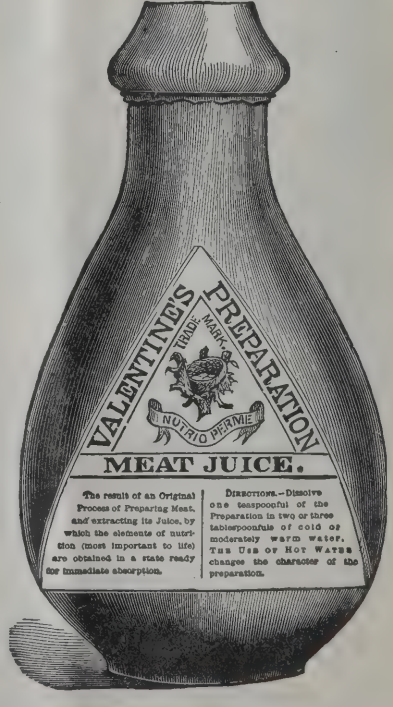
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TRADE MARK
PREPARATION
NUTRIO PHERMIE
MEAT JUICE.
The result of an Original Process of Preparing Meat, and extracting its Juice, by which the elements of nutrition (most important to life) are obtained in a state ready for immediate absorption.
DIRECTIONS.—Dissolve one teaspoonful of the Preparation in two or three tablespoonfuls of cold or moderately warm water. THE USE OF HOT WATER changes the character of the preparation.

THE SOCIAL EVIL.

BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA, PA.

IT IS forcibly up to us, and we must claim the office fearlessly, to talk plainly about it as doctors. If we cannot do this, in the seamed face of erring and injured humanity, we are obsequious pretenders, cowardly skulkers in the great calling that has been appointed as professional adjuster of the physical and psychical conditions of society. If we are trustful of human nature we dare not assume to be better than God's Book, the Bible. To start the present problem, who of us can get away from the passional and generative facts of our existence and birth? Are we not individually the product of sexual desire and activity? The natural impetus to sexual activity is not of the human will, but of the dominant function of life itself. The natural appetite for sexual consolement is perpetuated unabated, from generation to generation, by the special impulse of the sexual act by which and through which is generated succession of individual life in normal natures.

Since the Biblical Eve, in the emotionless garden of Eden, experienced her initial and personally developed promptings to taste the luscious fruit of the tree of knowledge, whereby Adam was to be inducted to the priesthood of generative pleasure and functions in sexual relations, the inextinguishable flame and inexhaustible fires of human desire in sex-love have, by passional yet normal repetition, kept themselves ardently alive from the initial spark, and will continue to do so till the end of time. It was by wisdom of the Almighty will that planned humanity male and female for each other.

We are compelled to remove our hats and bow bare-browed before the dignity of man's history. If the story of Adam and Eve, as narrated in Genesis, is literal fact and not symbolic tradition of the starting of the human race on earth?—if it is the naked fact that there was then but one man and was but one woman in existence?—surely the sexual relations of their progeny must have been peculiarly intimate and mixed for several generations of procreative practice. Would not this process of progeniture or begetment confront us squarely with the potential origin of the world's dominant penchant for sexual license, that neither prohibitive edict nor regenerative Gospel has effectively repressed nor suppressed, because of the ineradicable instincts of nature that held precedence in the potency of root and bloom of perpetuity? Let our austere calculating cynics begin to count and measure family acorns. Is it not true that every child that is conceived and born is the direct fruit of human sexual passion at the instant of the sexual act by which, and by which only, said child received existence and sexual impress? If sex passion made the child, sex passion is essentially that child's life-inheritance, the original law of its existence which a few years of bud development will evolve into unmeasured, possibly ungoverned and even ungovernable activity. All the sublime goodness and righteousness of God have never stamped out nor erased the permanence and potency of the sexual desire implanted in humanity as the means of continuing the creative act that made man and woman.

Despite the world's and the church's surface inhibition, we do not propose to wince or faint in the face of this great practical problem. Is sexual passion evil? Who made it so? Is man and woman to stifle the impulses that call for sexual consolation? Marriage, it is true, has been ordained for sex-love; but how many women are not favored with appropriate opportunities for marriage? How many men do not trample down the sexual impulse of their being until marriage relations can be happily and prosperously assumed? Marriage itself has become a serious responsibility to the conscientious man and woman. If lightly entered into or trifled with, its bonds strangle the dearest gods of love with merciless succession. The rites of marriage cannot graft to themselves all the monopoly of sexual gratification, abused and lustful as it too often proves because of the license of rites. It is therefore neither just nor charitable nor Christian to offensively censure as bad, as degraded, indecent or wicked the child, the boy or girl, the man or the woman who experience the sexual sense, the need of relief to the appetite which was implanted by the only act of nature that transmitted to them the initial element and potencies of life. The sexual "sinner"! How many make-believes have trained their eyes to roll skyward, have sharpened their tongues to tones of scorn and scandal, merely because their shift of Christian charity is too short and too thin to even clothe their assumption of superior purity —superior purity?—which individually often spells circumstantial differences in social influences, opportunities of social preference, escape from compromising embarrassments that grow thick hedges of environment and determine turning points in the pathways of life! Or, as Bishop McVickar has so aptly put it: "And yet, after all, their sin is only the ripe product and outcome of social condition, the growth and fruit of noisome, sodden soil, with its feverish exhalations, its lowered ideals. How can society deal judicially with these offenders, when the hand that should hold the scales is either palsied with self-consciousness or shaken with a fit of unreasoning rage?"

The world has in it its share of errors. With the inexorable sex penchant planted into humanity from the beginning, we need feel no surprise that in the earlier ages the creative sex idea was elevated to the reverence of sex worship in various ways, and that naturally, in unbalanced natures, sex mania has disfigured the fair features of sex manifestations in the world. It is amply true, even now, that as man clings to love of life, he clings to his province of sexual potency, and many a suicide results from the discovery that virility has been dethroned by the stigma of impotence. With the advance of "society" in civilization, promiscuous indulgence of the sexual appetite is denominated the "social evil"—social sin—one of the world's seven great sins—ONE! In the primitive days, when womanhood was hardy and naturally developed, before "society" began to set up so many artificial stunts, women coveted the privilege, the function and honor of motherhood, yearned and prayed for children, and had them without reserve. By Scriptural testimony, in the earlier Biblical days men and women sought each other without much formal system of social regulation. Women prized the opportunity and the ability to procreate as the special favor of God. Men gathered to themselves wives and concubines to the limit of choice or supply. In that tragic travesty about partiality between acceptance of fruit of the ground and mutton of the field, as recorded in Genesis IVth, it is more than probable that Cain murdered his brother Abel in a fit of jealous rage for sexual favor

because there was not a pretty or desirable woman for each. It may be noticed that Cain pleaded his own case, took his medicine in punishment for his hard-hearted crime—but then went in unto his wife, in the land of Nod, on the East of Eden, and she bare Enoch, who builded a city. Furthermore, in primitive days, women sought sexual favor under various pretexts, according to inclination, as sampled in the graphic history of Lot. Lot's daughters took sexual refuge with their salt-made widowed father in the mountain cave, during his amorous dreams of intoxication induced by giving him wine for the purpose, and thus by their father each daughter bare a son of eminent career. Childless Ruth, the youthful and handsome widow endowed with the womanly gift of mother Eve, went gleaning for barley in the fields of wealthy Boaz in whose sight she would find grace. She adroitly pursued Boaz to his threshing floor at night, and lay by his doubtless sensitive uncovered feet while he slept until he would wake—which he did at midnight—with the natural result that old Boaz took the animating Ruth for wife, and she bare a son of great renown, the father of Jesse, the father of David. Sarah, who was Abraham's half sister, and who supposed herself absolutely barren, appealed to Abraham to cohabit with her youthful Egyptian handmaid in order that Sarah and Abraham might obtain children by their maid. Old as he was, Abraham did not hesitate to hearken to Sarah's proposition, and Hagar the maid conceived. What followed? Hagar's youthful ardor evidently revived aged Abraham's virility and Sarah herself then conceived and bare Isaac, the father of many generations.

There is no element for levity in face of such historic cases. Society has builded many unsteady scaffolds since from which painful falls are numerous in view of the sexual tenacity of the social evil. Under the unrest of pervading sentiment few wives would be as generously and reasonably disposed as was sainted Sarah. Many childless wives pull the other woman's hair and enviously rip character up the back in divorce courts and suits for money graft, rather than adopt the gentle diplomacy of loving Rachel toward her chosen spouse Jacob—for family sake. The present writer is now in his forty-seventh year of family practice in medicine, during which he has seen and learned volumes of human history. In all he knows of but one actual case of wifely magnanimity that closely corresponds with the wifely and maternal dignity of Rachel's position toward Jacob. On contrary many peaceful family unions have been rudely shaken and broken by the matured wife's realization that her menopause has removed from her experience enjoyable acceptance of the usual frequency of the sexual act; also by the husband's chagrin because the sexual attraction of the wife has cooled and vanished to the degree that his approaches are not only undesired, but are ineffective, perhaps even repulsed. Man's natural appetite, prompting and enduring after the woman has become sexually "dead to the world," opens hundreds of doors to the prevalent form of social evil, because men of riper years dispose themselves to then seek abroad, among younger and more ardent women, the stimulus and consolation that they grievously miss in their home life.

Another fruitful concession toward the support of the social evil, like worm-bitten fruit, falls from the aversion and objection characteristic of many wives to the situation of pregnancy and the toilsome care of rearing children. "My wife strenuously dreads and objects to becoming in the family way, so to spare her all that I can, at times I must go outside" is repeatedly confessed by husbands who apprehend that possibly disease has been contracted by their ventures. Many such do not mean it for libertine violations of civil sexual codes, but they experience certain physiological necessities, as they sexually interpret them; they sensitively recoil from thought or practice of marriage coercion; and the alternative of gratification is conveniently at hand if they will pay for the hazardous accommodation. I have seen most intense anxiety arise from this situation on the part of men who, at heart, I knew honored their wives as sexual mates, but to spare whom took risks with promiscuous women because of the readiness and welcome that awaited the male patron who had a money compensation to bestow. Another incidental feeder of the social evil is the constitutional delicacy and sexual coldness or indifference discovered in many wives after marriage ceremonies had mortgaged a physiological defalcation. To be chosen and accepted to a feast that proves insipid and disappointing in every experience, eventually suggests trying a change of boarding table. There should be munificently endowed a college for the preparation of candidates for successful marriage. Esteem and honor for high types of qualification would easily outwear and outlive the connubial fictions that join hands in civil ceremony, but soon prove that theirs is another mismatch and not a mating devised by Heaven. Too many women are not sexually developed, enter marriage ignorant of its physical requirements, and should never have been married. Too many young women marry who are merely fond of the infatuation of an attractive beau, but do not need a husband—who is prone to become disenchanted after getting past the title page of the romance. Not a few men of ardent temperament and potent physique absorb disquieting emotions from disappointment evolved by their connubial relations. In their conscientious sensitiveness and regard for the weaker one, they would even appeal to God to crush the overbearing forces rousing their sexual propensity—but God does not respond in effect; the vital flame glows on in spite of will or wish, till the moral battle line is relaxed by the fascination of more ample welcome with its spontaneous surprise at the natural difference of endowments in women as well as in men. Even those who shudder with contempt at word or thought of the social evil or any house frequented for immoral purpose, should be chary of harshness of judgment in private matters were conditions are not equally comprehended because not personally experienced. It is always easier to condemn than to cure.

Christ introduced the reform dispensation. He set the example of charitable forbearance as proven by His kindliness toward Mary Magdalene who Luke records was known as a woman sinner; again proven by that remarkable interview with the woman of Samaria at the well, who had lived with five men, and the sixth at least not her husband; and proven yet again emphatically in regard to the woman taken in adultery—"in the very act"—where He wrote forgiveness with His finger on the ground, and facing her accuser said: "He that is without sin among you, let him firs

cast a stone at her."

Another prevalent inducement to the social evil is woman's coquettish fondness for masculine attentions, for fashionable dress that rivals the display of the monied class, for avoidance of the drudgery of manual toil. When a certain class of women and girls learn that the sexual appetite in men impels men to resort to nature's provision in the female sex at any cost, that cost is temptingly exacted at the price of proffered opportunity in the unhesitating financial deal of sexual exchange outside of marriage relations. These women as a class may personally realize but little satisfaction aside from the depraved "business" income of conducting the trade of the professional courtesan to obtain a soft-handed livelihood and possibly its show of bejeweled emoluments. Another prolific promoter of the social evil is a turgid imagination, eagerness for the excitements of romantic adventure into the sphere of erotic mysteries, where license can be indulged without the necessity of fear or restraint—until overtaken by the disaster of disease, which, in the self-hardened woman is often endured with little shame because she believes it no or little worse than the common luck of her accommodating sex. The male youth or the man will wince with chagrin and wilt with abasement under the lash of his indecent suffering if acute, while the woman who has ventured upon the thorny course of the harlot will passively abide her time for relief and the continuance of her degeneracy. The dizzy grasp after mere change that liberates from the monotony of home authority, of domestic work, of shop toil has turned the heads of many hundreds of girls who rushed into the supposed glamour of promiscuous habits, whereby men should be indulged at the graded market price of womanly dishonor, and the degraded winnings divided with the unscrupulous hard-fisted boarding mistress. Furthermore, a reeling quickstep through the open gates to the social evil is spurred by the sensual familiarities of the sexes formulated and practiced by rote in dancing-parlors, schools, halls, towed along into late night hours by the suggestive motion-rhythms of beguiling music that rocks mutual desire to the vortex of acute risque, if not also to the kept-house of actual assignation.

Also there stalk into the haunts of the social evil the concourse of subjects of poverty and need, of pressing want for comforts to appease the longings of civilized existence, because of which women resort to the convenience of sexual offering and service in order to win bread and clothing and fuel and roof. We all know that it is more comfortable to live than to starve! Society may be callous to the wants of the underpaid and underfed work girl and woman, but when the toil of the hands falls insufficiently recompensed and the gnaw of hardening circumstances deepen the bite month by month, the swinging doors of sexual prostitution yet beckon with invitations to try a probably softer lot, short as it may prove. It is largely the world's fault, the fault of encroaching civilization, the fault of modernized self-satisfied Christian respectability with its possession of worldly advantages that cause poverty to shove underpaid sewing girls and women into the heart-bruised avenues of sexual shame and barter for the consolation of bread and the decoration of a scarlet wrapper. Scandalous as it reads, considering the mass of unprovided-for women and girls, better would seem the moral benevolence of some form of poligamy acceptable to the wealthy and well-to-do class, whereby a mutual and obligated division of this world's comforts—better it would seem in the interests of morals and protection from disease than is the heartless forcing of unnumbered conscientious female recruits to the hades of disgrace and remorse on earth! All are not equally strong in self-defense. But the writer knows personally a family consisting of a widowed mother and four interesting adult daughters of exceptional refinement and artistic gifts, who bravely and nobly fight the battle of womanly purity by industriously working together from morning till night, and more usually then from darkness till near midnight hour, every week-day, at making silk neckwear for their employing wholesale manufacturing firm. This they perform at certain seasons at exhausting blood-money rates per dozen. The task must be steadily performed to satisfy the monthly calls for house rent and to provide for their other plain necessities. Why are they and many others compelled to put in these tedious long hours for mere subsistence? Because of the rapacity for the graft of mercantile monopoly that proposes to undersell competing houses that are financially weaker, and thus to drive the latter from the field of trade. Why? Because millionaire merchant princes and mercantile corporations, who can make their own prices for supply stock and monopolize trade profits, "PLACE" their heavy orders with manufacturers at compelling rates which impose nerve-exhausting toil on the hands and eyes and blood-wear of women who MUST struggle for simple livelihood, in order to produce the wares demanded at appalling low price by manufacturers of women's handiwork, even though these women are half crushed to earth daily if virtuous! Who can wonder that in so many cases the poor sewing girl, the interesting store woman, falter in their weariness, and accept the income of temptation as the more providential alternative, by joining the sought-for and better favored recruits of the demi-monde? Which one of us can willingly press upon their throbbings brows the thorns of censorious detraction, or write them down to the blackened level of social perdition? As God lives, and is God, accepting Jesus Christ as my example, I hope to never do so. If we cannot help these harassed women into more comfortable life, let us remain silent in regard to them and mind our own business in gratitude for our happier lot!

Anent the discomfiture of women who seek bread by the pleasure of men outside of marriage, in conformity with the moral sentiment of conservative religious attitude, and of the applauded spurt of scene-shifting political "reformers," in Philadelphia, there has been started an insistent clamor to tear out something special for diplomatic buncombe in the social interests of the city. There has therefore been inaugurated a hostile repetition of midnight raids by the police upon houses of ill repute. These heroic onsets are planned and conducted by schedule information furnished by clandestine spies and cooperative officials who are spasmodically impelled by the steam of high pressure sense of popular duty in response to claims for service and salary. The church authorities warmly applaud the name of one eagle-eyed agent, of the persecuting or prosecuting machinery, but at same time they do not offer or furnish these hundreds of unfortunate erring women any substantial oportunity of social sal-

vation by giving them honest and more honorable employment and life-supporting compensation. They are willing to have these women hounded to jail instead—they would self-righteously prefer to crush the female sexual refugee on earth completely. On a rounding-up night campaign, hundreds of girls and women are hauled unexpectedly into the police dragnet. The last vestige of their self-respect must be thus openly undone and lost, the last chance to get back into the avenues of correct life is officially slammed into their faces with bars of iron. No champion of the Gospel of sympathy and charity which leadeth the erring heavenward intervenes with the life-line of rescue after the pattern of Christ when the censorious scribes and Pharisees dragged before Him for judgment the erring woman. In the zeal for a puff of surface "reform" it is forgotten that these "fallen" girls and women have all been nursed at a mother's bosom, all have suffered some ignominious cross of life, all are in bonds of betrayed trust, of repressive circumstances, of mental delusion, of physiological tension, of constitutional degeneracy that have singly or by group perverted and deformed their natures. Furthermore, their perceptions and senses have possibly been submerged by the misdirections of drink, paid for by the passion-offering of men of respected popular positions, and whereby responsive womanhod so resistlessly loses grasp of normal balance. "But why don't such women resist?" cry the Pharisees. Did Eve resist? They also are daughters of Eve.

In this cursory glance at the social evil I have small occasion to seriously include the capriciously vile—the shameless prostitute to the natural sphere born through drunken or degenerate parentage—the relatively irresponsible physiological pervert whose situation needs the discipline of an industrial asylum and judicious taskmaster as a training school to more decent rectitude in civilized society. Possibly these conservative methods should be supplemental to the preliminary calming corrective of a spaying operation by skilful surgeons as special protective against the early debauching of male youths who are sensitively liable to easily fall astray if prompted by the sensual suggestion or erotic solicitation of the froward girl or woman. The distempered world has in it girls in their teens, and young or older women of experienced maturity, possessed by impulses of abnormally lascivious temperament or penchant; and though they have not drifted into houses of promiscuous resort, are nevertheless ardently on occasion alert for opportunity to induct prurient youths, even mere lads, into sexual familiarities with women. However impelled, this wayward feminine element, as a precocious social menace, should not be permitted physical chance because of excess of turgid passion to "spoil" and deflex the moral bias of incoming manhood. If the girl or woman "can't help it," as I have repeatedly been told by them, "without resort to the substitute of self-satisfaction"—I believe it wise to legally devise unsexing methods for reducing their abnormal sexual furor. In several instances the writer has been applied to by women without husbands for medicines to prevent their sleeping hours from being harassed with exhausting orgasms of erotic dreams—every night. Half of the world does not know the living condition of the other half. The caustic criticisms and denunciations of the former half must be like the brassy blare of ignorant presumption in the hearing of the God of all humanity alike.

There are likewise insatiable youths and men egregiously devoid of ethical and honorable sexual ideals, and who carnally cruise with goading satyriastic propensity after any attractive girl or woman that they fancy may be made an available compromise for sexual use. Among this debased class of males are to be found those of brute instincts, who with venereal disease even crave virgin contact as a reputed or supposed remedy for disgusting sexual contaminations. Hence these libidinous degenerates, these lecherous prowlers against female virtue, seek to trap and ruin young girls by cunning wiles, by violent abuse of ordained female function, even by gross assault of shocking rape as convincing proof of erotic mania. Such monstrous perversion is not limited to any particular nationality, or color, whether white or yellow or black. Sexual crime has no set color of skin, but has been smudged with innate perversity of its subject which moral teaching and civil ethics and the law's usual penalties fail to control or to erase. Some years ago I was consulted by a young man not out of his "teens" for a moderate gonorrhœa. He openly stated that his main pleasure in life was his ambition to "be the first one" or seduce every girl he met for whom he experienced the fancy. After obtaining an introduction his villainous purpose began. Happening to be good looking, he had the oil of Satan's tongue to smooth his words and the fluency of presumption to cleave his way. Thus equipped, he proposed to storm the castle of the young woman's repugnance with abating difficulty. He represented an existing class of freebooter debauchers of young womanhood on sexual lines. He claimed that goodness in a girl made no difference. He was himself a son of religious, church-going parents whom I knew personally. I hold that decent society deserves tenfold safer exemption from such prowling libertines, whether responsible or irresponsible by reason of abnormal propensities. Ten years ago I advocated castration of such males as the reasonable corrective. Considering the increase of libidinous crimes against girls and women and even boys, it is my opinion that nothing would so enhance respect for clean society and its safety from poaching and brutish despoilers as would legalized emasculation of degenerate passion by surgical castration, followed by at least one year's discipline at hard labor to displace tendency to erotic contemplation. Misplaced sentiment has done worse than run to seed when it would not judicially arrest outrageous error, rather than to await its explosion into brutal assault, even awful murder.

A notable flush of psychological exegeses has latterly come into print relative to sexual inverts. The sexual inverts and perverts are not a practically important social asset to the world's welfare, if the world is ever to become better. Mystic haunts for orgy practices by sexual perverts, and which spread by imitation, are fungus offshoots of the social evil. The crops of sexual freaks should be timely curtailed in the United States to allow community to grow normal. The world must grow normal psychically and physiologically if it ever grows good. Religious teaching never for long overbears sexual penchant. The former filters inward from precept like rays of light and dews of moisture; the latter surges outward like the native fires of indi-

vidual life itself. The office of judicious surgery should be legally authorized and invoked to arrest the spread of abnormal or pervert conditions and the reduction of sexual crimes. About ten years ago the writer was seriously informed by one of his well-to-do lady patrons how she had been most ardently and persuasively wooed, with insistent vulgar unnatural intent, by a woman who declined to live with a husband, and with whom my patron was thrown in contact as an assistant in a fashionable Turkish bath palace in this city. This assistant professed to be unresistingly smitten with the physique of my patron, and urgently craved permission to administer the baths at my patron's home instead; but when the real intent was demonstrated, the pervert was sent from the house and my patron also ceased her visits to the Turkish baths. Nevertheless, a female pervert of this type, with bath-house opportunities, could readily insinuate her passional indulgences into many acceptances among other women and even surprised girls, and, because of the absence of all liability to pregnancy, the purlieus of moral corruption be spread endlessly. Again, it is a fact well authenticated to the writer some years ago that there were special houses of resort supplied with female perverts only, who furnished the unnatural use to male perverts and other men if aceptable, but served no man by any other way. If these degenerates were only myths of fable, they would be relatively harmless; but how long would it take one expert popular Siren to induct forty youths and men into gross depravity? The diseases of these perverts are the most disgusting that disgrace any hospital—rather than which the obliteration of the distorting propensity by the surgeon's knife would prove a saving grace in practical reform. The sexual pervert is a mental pervert, whether male or female, whose orgies appal civil comprehension, and, compared with which, the ordinary natural form of prostitution or social evil wins much in general respect. Idiots can never represent the average sense of humanity—sexual idiots need the corrective sexual operations, and vegetable diet, and regulated industry to disarm the menace of progressive abnormal perversion.

This apparent digression is not without its bearing on the social evil. It applies rather to the aberrations of sexual promptings and pursuit. But while the marked aberrations may be reduced, it will steadfastly be borne in mind that the institution of promiscuous sexual commerce has had existence and recognition since the exit from the garden of Eden, and will never be eliminated while humanity exists on this earth. Judging from the long past, human nature can never absolutely divorce itself from its created and its creative instincts for sexual pleasure. On its sidetrack from connubial relations with their frequent strivings for financial support, the social evil bears the disfigured features of a money deal of sexual exchange, unhappy and unfortunate as are its general conditions. As to thousands of women, the social evil alternative intercepts the natural impetus of young men to marriage, whereby the concourse of bread winning single women might be provided with homes with their husbands, and the conditions of sex-want more naturally and safely equalized. Men are learning in increased proportion to shirk the responsibilities of home-making and home-keeping for themselves; and woman is proportionally turned to her chances of laboriously earning bread and supplying roof for herself so long as she can, unless she yields to the alluring dazzle of "the kept woman" or the dangers of sexual patronage. The social evil is maintained at immense expense. On its higher lines it exists largely by the financial support of local politicians who grow corrupt with office positions; also by the patronage of appointees with short hours and long leisure, and who for little service draw liberal salaries from the city treasury; again by men from lesser towns and the country who bring with them better money than discretion when visiting great centres always stocked and prepared for sexual diversions—men who too often return to their homes with a worse elephant on their hands than was supposed to entertain them in their temporary pleasure-seeking explorations. The elasticity with which relatively reputable men from country districts part with money on occasion for novelties of sexual ventures, is equalled only by the mercantile facility with which venereal diseases are exchanged and imported from the brothel broadcast throughout the land among innocent women already wives or who may presently become so to then gather the rust of evil for life. The professional social evil is an alluring though deceptive rival to the home. The impression is habitually indulged by women of austere discernment and lily-white sentiment that any woman who belongs to the demi-monde is essentially a low strumpet by nature and choice, fit only to be shunned and condemned. But there is no scarcity of genteel women of tidy address, women of education and refined instincts stranded upon the emergency shoals of courtesan experience, who are well equipped to be on safeguard in the presence of gentlemen and respectable strangers. Many a careless wife and querulous sister at home may drop into shadow by comparison Then there has prevailed an entertaining custom adopted by representatives of wholesale businesses in cities who take almost hourly charge of purchasing patrons from the country during intervals between business hours when buying the season's stock; and from theatre or opera at night to an upper-ten demimonde parlor is no exceptional variety in the schedule of business hospitality. Between a bagnio beauty in fetching attire, and with pianoforte accompaniment of a transient hour, and the commonplace domestic home companionship of calico and dishpan there will recur thoughts of repeated contrasts. Though he may escape the discomforts of disease, that man's nature has waked to insurgent disquiets when memory regilds the devouring charm of a misspent hour, but which disconcerted his remaining years of life. One hour with an accomplished courtesan made her the rival of wife or mother or sister ever afterward—so much the greater pity. The woman sought only patronage and cash or income—the man witlessly sought the diversion or novelty of change, but lost thereby the contentment of his life for reasons that he could never entirely explain to himself. Neither he, nor the woman he purchased for a moment, knew the happiness that the embrace of pure and undefiled affection spontaneously affords.

The numbers of female social votaries are great. Estimated statistics can but approximate the facts. In "Hardships of Social Vice," written for THE MEDICAL TIMES of December, 1905, I purposely avoided the use of home statistics to any extent. For the purpose

of illustration I chose to refer to a published account of the number of girls and women engaged in prostitution in England or the United Kingdom, nearly fifty years ago, as fifty thousand prostitutes, who, to live, must have sexual congress at least once every twenty-four hours for compensation. It was the object of that paper to deal with conditions mainly. But since its publication I have received an interesting letter on the subject from an intelligent literary gentleman who has lately been abroad, and not with his eyes closed. I quote a few lines of his valued communication as follows: "As a one-time denizen of some of the largest of the world's cities, including Calcutta and some others in the Orient, I do not think you have exaggerated in the least the gravity of the conditions. * * * I was informed, by no less an authority than Dr. Allingham, of St. Mark's Hospital, that when in London in 1885, there were no less than the total you mention for the whole United Kingdom of prostitutes upon the streets of the British metropolis. I can readily believe this to be the fact, judging by the swarms of these poor creatures encountered in a nightly walk from Temple Bar to Charing Cross station." Fifty thousand in London alone in 1885! And the half of the street-walkers diseased! One dreads to begin to carry out the parallels to our American cities which have been largely stocked with fast women whose instincts of loose habits have been transported by immigration from England, Ireland, Russia and various other sources of human want and sexual barter! But having reached the limits of the present paper, I must defer continuance of the problem to a future study.

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CONSTIPATION AND DIARRHŒA CLINICALLY CONSIDERED.

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OF recent years there has been recognized a type of disease where the intestine is in a condition of spastic contraction; according to Albu, 25 per cent. of the cases of constipation in women belong to this variety. Treatment of constipation due to spasm is naturally very different from that of constipation dependent on atony, but unfortunately the diagnosis is often difficult or impossible, the patients being usually neurasthenic or hysterical individuals, exhibiting spasm in other regions of the body, such as cardiospasm or pharyngeal spasm. This intestinal spasm is not continuous and gives rise to sensations that may range merely from a feeling of discomfort to positive colics; the contracted intestinal knots may be palpated as tender sausage shaped masses, while rectal examination may reveal a spastic condition of the sphincters, making the feces sometimes show the characteristic ribbon or lead pencil shape. In these cases the avoidance of all irritation of the intestine, especially massage, and the use of soothing and relaxing measures, such as warm baths, hot applications to the abdomen, warm oil enemas, belladonna, non-irritating, gruel-like diet, and rectal bougies are indicated.

The use of oil injections is one of the most useful procedures for the treatment of mucomembranous colitis and constipation; but the cases must be selected and injections given properly. The routine injection of olive oil in all cases of constipation will prove disappointing, but gratifying results can be obtained in cases depending on chronic colitis; constipation associated with spasm of the bowel, such as is so frequently found in neurasthenia, as mentioned above, and in atony of the intestines, used conjointly with electrical treatment. Inject from 3 to 10 ounces of warm olive oil at bedtime; if retained during the night it usually results in an evacuation after breakfast. Introduce the oil slowly so as not to create an immediate desire to evacuate. Hershell devised an apparatus consisting of a glass funnel provided with a metal loop, by which it can be suspended at a convenient height above the bed on which the patient lies while taking the injection, fitted with about 27 inches of rubber tube of large caliber and terminates in a nozzle of special construction. This nozzle has a large bore to allow the ready passage of the oil, and has the end of the bore well rounded so that even when roughly and unskilfully used it is impossible to injure the rectal mucous membrane, and from its shape it is self-retaining. The flow of oil is controlled by a spring clip, so contrived that when opened it will remain so until a catch is released. The measured quantity of oil is heated by standing the beaker containing it in a basin of hot water; commence with five or six ounces and reduce the dose daily until reaching the smallest amount which will produce an action of the bowels. Use the oil on alternate nights, the intervals being lengthened gradually until the oil is no longer needed.

An imperfect evacuation of the large bowel is generally associated with symptoms comprehended under the term "constipation"; but while the large bowel up to the hepatic flexure or even to the splenic flexure may be constantly loaded, yet the patient obtains from the overflow a daily movement; consequently he makes no complaint of constipation. The large intestine, whose vitality has been depreciated, both by local inflammatory changes and by the general loss of tone, is thus rendered liable to some specific infection; ulcerative, membranous or other forms of colitis may develop in consequence, frequently dating from a very early period, when, owing to the unsuitable feeding of a child, the intestines are distended with gas. The cæcum and ascending colon appear to suffer most severely, for this portion of the bowel is hung up at the hepatic flexure, which is rendered more acute by the distension and consequent elongation of the transverse colon in a downward direction; this distension, by dragging on the band supporting the splenic flexure, renders it difficult for the contents of the transverse colon to pass into the descending colon; the large bowel becomes more or less inflamed, even producing a distinct peritonitis, as shown by effusion. The inflammation of the cæcum and ascending colon produces an adhesive process between the outer wall of the bowel and the peritoneum, which helps to support the increasing weight of this portion of the bowel and to some extent oppose its distension and downward displacement; similar changes take place at the splenic flexure, these adhesions develop into distinct mesenteries and strong bands, and the bowel is less able to perform its functions; the intestines become bound down; the sigmoid is so contracted that it ceases to

be a loop and forms a straight conduit, the presence of the inflamed bowel in the true pelvis interferes with the functions of the ovary and the fallopian tube, and in this way constipation plays an important part in sterility among women. The stomach's functions are finally interfered with and the kidneys become mobile.

In studying oil enemata in chronic constipation, Fleiner makes two varieties of chronic constipation, the atonic and the spasmodic, which are sometimes found combined. The lower half of the large intestine is then in a state of spasmodic contraction, while the upper half is atonic and distended with gases and fæces. The distinction between atonic and spasmodic constipation is of importance, for electricity, massage, and laxatives, which are efficacious against the former, not only fail in the latter, but are harmful, for the spasm of the intestinal wall is increased by the irritation produced. In some cases the administration of narcotics, particularly belladonna and hyoscyamus, are excellent, but these means often prove inefficient, while olive oil injections constitute a ready and safe way of relieving even the most obstinate cases of spasmodic constipation, as the oil exerts a stimulating and soothing action on the intestines. It can be tried in atonic constipation, but as this is relieved by other means of a still simpler kind, the injections are especially indicated in cases of mixed and spasmodic constipation; Fleiner employs a cannula with a bulbous end, similar in appearance to an ordinary vaginal tube, and large enough to allow of the easy discharge of the oil; this is connected by means of a flexible tube with a syringe containing about 15 ounces of pure oil. The patient is made to lie on his back with the pelvis elevated, the crannula is introduced, and the oil injected slowly; the operation usually takes from fifteen to twenty minutes. The cannula need not be passed very high up the rectum, for, by placing the patient in the position above described, intestinal pressure is lowered and the oil is aspirated by the intestines. Done carefully, for some time after the injection the oil gives rise to no sensation, but after a while the patient feels a desire to pass wind, and there is no pain if pure oil is used. The injections are repeated daily until the intestine is cleared of its contents, two or three enemas being usually sufficient for that purpose. When this has been done, the effect is kept up by means of an injection of about 10 ounces of oil at intervals of a few days. Remember, that when the intestine is very much distended with fæces, the first injection may not succeed in moving the bowels; here an enema of water should be given a few hours after the oil injection. Nothing but pure oil of good quality should be used, free from all rancid and acid principles which give rise to colic. After each operation the tube and cannula should be cleaned by washing first with alcohol and then in water. Not only in chronic constipation, which is so frequently met with in neurotic subjects, in anæmia, and gynæcological affections, oil enemata are also very useful, according to Fleiner, in the treatment of membranous colitis, in appendicitis, rectal inflammation, and intestinal disturbances following stomachic trouble.

In habitual constipation of nervous origin, Dubois recomends an exceedingly simple method, which has been systematically and successfully practised by him. No medicaments are prescribed, but the following instructions given to the patient: (1) A regular rising from bed in the morning at a fixed hour (such as 7 o'clock), to secure that stimulation of peristalsis induced by awaking which should occur always at the same time. (2) Taking a tumblerful of cold water (or a quassia infusion, if the patient, after all, insists to "have some medicine") immediately after getting up ("a second stimulation of peristalis"). (3) Taking breakfast (including Graham bread, and butter) always at the same fixed hour, 7.30 a. m. ("a third stimulation of peristalsis"). (4) Daily making an attempt at defæcation at the same hour, 8 a. m. ("a fourth stimulation of peristalsis"). (5) Taking abundant amounts of food (especially of vegetables and fruits) at each meal. Such "anti-constipation code" should be given to the patient not only viva voce, but on paper as well, and be accompanied by the practitioner's "absolute promise of success."

In atonic conditions of the intestine, Peterson recommends pouring water over the abdomen while the patient is sitting in a tub containing about six inches of water at a low temperature; this procedure is a powerful aid to peristalsis.

The use of the continuous current has been advised by Shoemaker; the intrarectal rheophore, attached to the negative pole, being introduced within the bowel, while the sponge covered rheophore representing the positive pole is placed upon the perinæum, thus the constant current passes directly through the prostate gland. The patient is able to exactly graduate the intensity of the current by means of more or less pressure upon the rheophore; the strength of the current should be about that of 1 milliampere, rather less than more, and the patient is at first unconscious of its passage. Gradually he notices that the rectal electrode has become heated to a point at which it cannot be comfortably borne. The slow, steady increase in the strength of the current, sometimes from 1 to 10 or 12 milliamperes, is of value in producing the result; in treating prostatic disease in this manner he noticed the rapid laxative effect of the galvanic current, and the secretion from the mucous membrane is stimulated, as well as peristaltic action.

The treatment of chronic colitis should depend largely upon its ætiology, and the physician should not be satisfied with such a diagnosis as chronic catarrh of the large intestine of nervous origin, for the nervousness is usually the result of the colitis. In 500 cases which came under the observation of Von Beck he found chronic inflammation in the region of the large intestine in 394; the cure of the colitis depending in greater degree upon the removal of this inflammation. The most common varieties of this inflammation were perityphlitis, disease of the stomach, and gall bladder, and disease of the female genital organs, lesser causes carcinoma, tuberculosis, and actinomycosis. In five of the cases in which there were persistently recurring attacks of colon disease, notwithstanding vigorous dietic and other methods of treatment, the entire colon was excluded by anastomosis of the sigmoid flexure with the ileum, which produced satisfactory results, so Von Beck offers the following propositions with reference to

the treatment of chronic colitis:

(1) The cause of colitis must always be determined and the treatment based upon this ætiology. (2) If the colitis is due to inflammatory processes in the vicinity of the colon, their fundamental foci must be controlled or removed, operative procedures being employed if necessary. (3) If the causes are to be found in carcinoma, tuberculosis, or actinomycosis of the colon, the colon disease must be attacked by radical or palliative operative measures, including resection, enteroanastomosis, or colostomy. (4) Should the colitis be due to a cause of some other character, ditetic or other symptomatic treatment may be tried. (5) If the colitis yields to none of the methods mentioned, it may be necessary to exclude the entire colon by anastomosis of the sigmoid with the ileum. The large intestine in man is, according to Von Beck, of minor importance, for it is a relic from the herbivora, and is so susceptible to chronic inflammation and malignant tumors that its exclusion can be well tolerated and can lead to no ill consequences.

In the treatment of most forms of constipation and diarrhœa the diet is of paramount importance. The comparative digestibility of the various ailments under different conditions needs to be studied with even more zeal than the action of drugs upon the digestive processes; Perry, in studies on the "Digestion of Breads," has shed important light upon the causation of that most frequent form of indigestion in which the starch, failing to be promptly converted into dextrin and maltose, undergoes fermentation. Ninety-two per cent. of the starch in our food is, under favorable conditions, converted into dextrin and maltose during mastication, and the period of about thirty minutes in the stomach before the HCL secretion is strong enough to stop it; but if very much less than this is so changed, the subjects suffer from pressure, acidity, heartburn, and other common symptoms which are often hardly noticed for a considerable time. The quantity of saliva mixed with the starchy food during mastication determines the amount of starch digested in the mouth and stomach, and supposing the person not to have the bad habit of taking frequent drinks of some beverage to moisten the food he is chewing, the dryer a morsel of bread or other amylaceous article of diet is, the more saliva will be required to pulpify it sufficiently to be swallowed, and thus the greater the proportion of HCL in the stomach puts an end to the amylolytic process. Perry found that besides the degree of dryness the porosity of a bread increases the quantity of saliva absorbed by it during chewing; the softer a sample of bread is, the less saliva it is possible to get into it, and starchy foods so prepared as to be full of fat, such as pastries, fried bread, fried potatoes, are almost impermeable to the saliva, which makes great differences in the digestibility of the different kinds of bread and biscuit. Perry's numerous experiments demonstrate that the percentage of water contained in these was in inverse proportion to the percentage of their contained starch digested in the mouth and stomach. The indigestibility of hot or fresh bread is not due to the presence in it of living yeast fungi or other micro-organisms capable of causing fermentation, for even freshly baked breads were found not to contain any such micro-organisms, none of these concerned in fermetation being capable of withstanding the degree of heat (163 degrees F.) found in the centre of loaves during the baking, but the real cause of the indigestibility of fresh bread is its large content of water and deficient absorbability of saliva. Hence the first steps in the cure of amylaceous dyspepsia is to prohibit, not all starchy food, which would seriously impair nutrition, for three-fifths of the total nutriment of man should consist of carbohydrates, but to forbid all preparations of starch which are not dry and porous enough to admit of a large absorption of, and admixture with, saliva during mastication. The patient thoroughly chews and insalivates such forms of food instead of taking most of his starch in some soft, mushy form, even then helping it down with frequent draughts of liquid because too indolent to masticate enough to provoke a sufficient flow of saliva; eating slowly as well as completely for the insalivation of not only the starchy foods but also meats, since unless the latter are finely comminuted by the teeth, the gastric juice cannot act upon all the particles. Patients who cannot otherwise form the habit of thoroughly insalivating their food, should, acording to Brinton, follow Sir Andrew Clarke's rule and count the bites; for every mouthful of meat they must allow thirty-two bites, or one for every tooth, and for tough meat sixty-four bites; solids and liquids should be taken separately, the latter at the end of the meal or between meals. The foregoing rules are sufficient to cure many cases of dyspepsia without other help; but when they are not sufficient, let the patient take his farinaceous and proteid foods at different meals. Take bread and butter or other carbohydrates at breakfast, but no fish, eggs, nor meat with these; at luncheon, have fish, eggs, or meat, but no farinaceous articles whatever. Then at five o'clock another farinaceous meal, as at breakfast, and at eight a proteid meal again. Such a method of feeding should be efficacious, since these different kinds of aliment require very different lengths of time to digest and pass out of the stomach; and when carbohydrates, which should be fully digested within two hours, must wait five or six hours for their acompanying proteids to digest, the probability of the undergoing fermentation in the stomach would seem to be greatly increased; Brunton recommends the drinking of hot water upon rising, retiring, and at other times during the day, when the stomach should be empty or may need such help to empty itself, prescribing acid and pepsin in weak stomachs after meals, and often a little alkali just before meals to stimulate the secretion of gastric juice.

Diarrhœa due to various causes, including phthisis, typhoid fever, erysipelas, and intestinal catarrh, have been treated by use of lactic acid. The preparation used by Shchegoleff was an aqueous solution sweetened with syrup; in this form the drug was well tolerated, and no unpleasant symptoms were produced. The quantity of lactic acid given per diem averaged about 115 grains, or little more than half that given by M. Hayem, who first recommended this treatment, which may perhaps account for some of the failures of the Russian practitioner. Chernisheff has also published an account of his cases, in which he prescribed lactic acid in three cases of acute intestinal catarrh, in six of chronic gastro intestinal

catarrh, also in eight of diarrhœa due to phthisis, and in three of diarrhœa complicating Bright's disease; in all these cases good results were obtained; for example, several cases of simple catarrhal diarrhœa were relieved in from two to five days, while in six cases of non-specific diarrhœa in phthisical persons the diarrhœa ceased the day after the commencement of the treatment. In one case of chronic gastro-intestinal catarrh, the diarrhœa ceased on the third day from the commencement of the lactic acid treatment, but reappeared when it was stopped, and two more days of the treatment effected a more permanent cure. Notwithstanding the observations of MM. Hayman and Lesage on the value of lactic acid in the diarrhœa with green stools of young children, according to whom lactic acid destroys the bacillus on which the condition depends, this medicament is rarely used in America.

In the matter of gastric and intestinal antiseptics, Reigner refers to the various views held as to the possibility of disinfecting the contents of the alimentary canal, continuing the experiments of Strauss upon gastro-intestinal antiseptics. He placed stomach and intestinal contents in graduated tubes, with grape sugar in equal amounts; the antiseptic was then added in known quantity in watery or alcoholic solution, and more rarely in powder form when not soluble. As regards gastric antiseptics, he finds that sodic salicylate 1-8 per 1,000, menthol 1-2 to 2 per 1,000, and thymol 1-8 to 1-2 per 1,000, have relatively high disinfecting powers, while a medium disinfectant action is possessed by chinosol, chloral hydrate, soluble silver, and actol, and only a slight one by even large doses of steriform and ichthyol. As regards intestinal antiseptics, chinosol and thymol arrest fermentation in 1-2 per cent. solution, and delay it in 1-6 per cent.; bismuth salicylate, or bismuth napthol arrest it in 1 per cent., and delay it in 1-4 per cent. Resorcin, chloral hydrate, silver, benzo naphthol, and steriform are inferior to these agents. From experiments it has been learned that antiseptics behave differently in relation to the stomach and intestines; menthol is an excellent gastric, but an inferior intestinal antiseptic; yet these questions cannot be definitely settled by laboratory experiments, but must be determined by clinical practice. Thus a disinfectant is useless if too poisonous, and a gastro intestinal antiseptic must be insoluble, this insolubility being also a guarantee against intoxication. Extensive contact with the intestinal contents is desirable, and hence the antiseptic should be given in frequent and small doses. In motor insufficiency of the stomach, salicylic acid menthol and thymol have been shown to be of clinical value by Strauss. Among intestinal antiseptics Strauss has shown menthol to be worthy of recommendation. Thymol is inferior to menthol, and must be given on a full stomach to avoid irritation. Both bismuth salicylate and bismuth naphthol are worth trying in flatulence.

Gaseous distension in the bowels with or without pain, coming on several hours after eating, is usually a result of intestinal indigestion; the liver, overtaxed in destroying the toxins produced in the intestines, becomes impaired in time, the skin having then a muddy tint and the sclera and conjunctivæ a yellowish tinge, while the urine is likely to be scanty, high colored, and very acid, and indican is generally present in excess. This indicanuria with uricacidæmia can be considered as proof positive of intestinal indigestion. There results also either constipation or diarrhœa, and many troublesome as well as often serious nervous symptoms. The hyperacid urine produces irritation of the genito-urinary tract with a hyperæsthetic condition of the nervous distributed to it. Porter insists also that all the non-parasitic skin affections are in large measures not independent diseases, but only the results of intestinal indigestion. Concerning treatment Porter emphasizes strongly the importance of studying the diet of each case individually with the utmost care, and basing it upon the results of frequent analysis of the urineas to urea, uric acid, indican, etc. While a mixed diet is best for the nutrition when it is well borne, severe restrictions must often be enforced in this disease. In some cases even plain milk is too rich, and to avoid the cream skimmed milk must be ordered, or to get rid of the sugar koumiss, zoolak or kerf must be substituted; it is not always safe to consult the patient's fancies respecting foods, and with the most severely restricted diet it is sometimes advisable to administer small quantities of alcohol temporarily. On account of their large content of nucleo albumens some vegetables should be allowed as soon as they can be digested without much flatulence, and until then a concentrated preparation of the nucleo-albumens should be administered three times a day, followed by eggs, beefsteak, stale bread and butter and toast as speedily as possible.

Porter suggests the administration of a little dilute HCl and pepsin, for those cases only in which the gastric juice is deficient in those ingredients, and recommends the administration also of a few grains of dried ox gall and pancreatic extract three times a day before eating. He gives some of the intestinal antiseptics, such as charcoal, resorcin, salicylic acid, etc., also tannalbin for its effect in precipitating the accumulation of mucous, and when the liver flags, a mercurial; a laxative, if required, and caffeine with strychnine as nerve tonics.

Faber calls attention to the frequency of symptoms referred to the stomach, and strongly suggestive of gastric disease, which yet depend entirely upon affections of the intestines, thus in four carefully studied cases of tapeworm the gastric secretion was found normal in two and excessive in two, the hyperchlorhydria in one of the latter disappearing promptly after expulsion of the worm. In other cases of intestinal troubles various gastric symptoms, such as nausea, vomiting, oppresison, cardialgia, eructations, etc., occur. Even when decided abnormalities of the gastric secretion are found the real cause may be proved to exist in the intestine, the cure of which removes all the dyspeptic symptoms and abnormal conditions. Among the most common of such dyspepsias from bowel troubles are a result of neglected constipation, and secondary irritation or inflammation of the colon. Strong laxatives are injurious in such cases; only castor oil and daily small doses of the saline should be permitted, the main dependence being upon diet. Vegetable food in finely divided form as in puree, stewed fruit, rye bread, coarse wheaten breads, oatmeal, etc., are especially valuable.

THE ABDOMINAL CAVITY SCIENTIFICALLY STUDIED.

BY S. E. STADDON, M.D., PHILADELPHIA.

THE sensibility of the abdomen has been a much mooted question for many years. There have been many exhaustive studies on this subject; among the most thorough and latest is that of Kelling who decided some years ago that it was necessary to study more closely the sensibility in the region of the cecum; also the sensibility of the skin should be distinguished from the tender points in the musculature and these latter from the tender points in the pelvic sacral hollow, and each should be compared with the symmetrical points on the other side of the abdomen. Kelling believes that the tenderness at McBurney's point is purely nervous; here the nerves of the appendix correspond with those of the abdominal wall above, so that the irritation in the sympathic plexus of the region of the cecum produces hyperesthesia in the intercostal nerves and also at the places where the cutaneous nerves pass through the fascia. Another tender spot exists in the sacral hollow of the pelvis, the ileocolic plexus, which may be hypersensitive and tender in essential irritative conditions, such as hysteria, neurasthenia, etc., or by radiation, as in appendicitis, colitis or cholelithiasis. Tenderness in this region is not alone enough to diagnose appendicitis; and palpable anatomic findings are the only reliable basis for the diagnosis. For the diagnosis between appendicitis and cholecystitis, even icterus is not decisive except when it occurs without fever, for bacteria may be carried from the appendix into the liver and thence into the bile, thus inducing cholangitis and cholecystitis. Thus icterus is not a rare accompaniment of appendicitis; and explains the frequent combination of appendicitis and of subsequent cholelithiasis; if there is a striking lack of tenderness in the pathologic resistance and its vicinity, it is probable that the pain, if it exists, is falsely located, and that it should be referred to the more centripetal sympathetic plexus or to the skin, and in the latter event to the symmetrical point opposite. In cases suggesting appendicitis requiring operation, special attention should be paid to the gall bladder, particularly when the findings in the appendix are trifling, and contrawise the appendix should always be investigated during an operation for gallstones. In cases suggesting appendicitis or a gallstone affection, without decided palpable findings, the diagnosis should be left in abeyance, but the treatment should be that of the more serious affection.

Another interesting subject is acute peritonitis due to infection by the diplococcus pneumoniæ. Ashdoune has reported such a case recently in a London journal as follows: The patient, a woman, had been well excepting that she suffered from pain after eating for six months until two weeks previously when she was attacked with diarrhœa, vomiting and abdominal pain. She thought this was due to her diet and simply took some brandy which relieved her, staying in bed two days without food. On the third day she resumed her usual duties about the house. Two days before admission to the hospital she was seized with acute abdominal pain and diarrhœa; but did not vomit. She treated herself, but as the symptoms continued on the following day she consulted a doctor who gave her medicine which stopped the pain and diarrhœa momentarily. In the evening the pain returned and the abdomen began to swell; distending move above the umbilicus than below it. Movement was impaired, but there was no muscular rigidity, but there was some tenderness over the right iliac region, but no evidence of a tumor. The abdomen was resonant except over the hypogastrium; liver dulness was present. Rectal examination revealed nothing, and the patient's menstrual periods were regular, one being then in progress. The heart and lungs were normal, while her temperature was 103.6 F., the pulse 128, and the respirations were 32. The distension was most marked in the upper abdomen and there was tenderness on pressure in this region, but the lower segment was less distended without tenderness. The iliac fossæ were quite free from swelling or tenderness. On opening the abdomen in the middle line above the umbilicus, the distended stomach was found and a quantity of pus was found between the stomach and the liver wtih thick fibrinous deposits on the surface of the viscera in the vicinity. This pus was odorless, creamy, and of a greenish yellow color, with numerous flocculi floating in it; some was collected for bacteriologic examination; the fibrinous deposits adhered to the peritoneal covering of the viscera and on removing them that membrane was seen to be lusterless, reddened, and in places inclined to bleed; no lesion was found in the stomach, duodenum or gall bladder. A second opening was made below the umbilicus and a similar condition was found there, while the appendix, intestines and uterine appendages were examined, but without finding anything to account for the condition. The peritoneal cavity was then sponged out and well flushed with sterilized water and a Keith's tube was placed in the pelvis and the rest of the incisions were closed. The patient recovered from the anesthetic, but in the evening became delirious and died next day. The pus contained diflococci but no other organisms.

The mucous of the stomach may vary greatly in pathological conditions as Shurtz has shown, for this observer found that one hour after a test meal, also after rinsing the stomach, that in one hundred and ten patients, in whom three tests were made, that in 52 per cent. the mucous was found in excessive amounts, while in the rest it was scanty or lacking; the latter group included 9 cases of achylia, 8 of motor insufficiency, 7 of gastralgia, 9 of gastric neurosis, 4 of anacidity, 3 of hyperacidity, 1 of ectasia, 2 of chronic catarrh and 1 each of ulcer, subacidity, cicatricial stenosis of the pylorus, gastrosucchorrea, obstipation, nephrolithiasis, acute dyspepsia and icterus. In twenty-eight cases of chronic gastric catarrh the mucous was found excessive at all three tests, as also in 6 cases of cancer of the stomach, in 1 of cancer of the liver and in 1 of ulcer, while the mucous was found excessive in the second and third tests alone in 10 patients, including 1 case of ectasia, 2 of motor insufficiency, 1 of gastrosuccorrhea, 1 of chronic nephritis with dyspepsia, and in 3 of gastric neurosis. The mucous was found excessive only in the second test in 2 cases of motor insufficiency, and in 1 of a gastric neurosis, and only in the third test in 7 cases, including 2 of subacidity and 1 each of subacidity, enteroptosis, hyperacidity, ulcer, neurosis and cicatricial stenosis. Shurtz believes that his research will establish the conception of catarrh of the stomach on a more solid basis.

There may be various sources of error in determin-

ing the outlines of the stomach by infection of the empty organ or by percussion of the distended one, while all authorities agree that the normal stomach lies entirely above the umbilicus, yet if the stomach is distended with gas artificially introduced it is forced downward, sometimes as much as 2 cm. below its normal outline when the person stands. Another source of error is when the transverse colon lies in front of the stomach, for the colon is forced forward as the stomach becomes distended by the formation of gas. Radiograms of persons not too stout throw light not only on the topography but also on the motor functions of the stomach to a surprising degree. The repeated giving of bismuth should not be regarded as so innocent a matter as is generally assumed, for while to date no injury has been reported from its internal administration, instances are on record of harm from its external use. In tests Schule found that the findings of percussion, the patient standing, after a test meal, always coincided with the Roentgen ray examinations.

Cysts of the pancreas are attracting more attention. Pollard reports three cases; the first was operated on ten years ago, and the last five years ago, all being treated by drainage through an anterior abdominal incision. In none of the cases was there any history of injury, but in two the onset was marked by severe epigastric pain and vomiting, and in the other case there was a sudden severe pain in the left hypochondrium. No sugar was found in the urine, but in two there was an occasional trace of albumin; two had lost flesh; the stools were natural and there was no excess of undigested fat, and the three cases presented very similar clinical symptoms, for in each there was a large tumor occupying the epigastric and left hypochondriac regions and portions of the umbilical and left lumbar regions; the tumors moved very little on respiration, but could be moved slightly from before backward and from side to side by palpation. In two cases stomach resonance could be obtained by light percussion in the epigastric region, although the tumors seemed to fill that region. In one the percussion note was dull over the most prominent part of the tumor in the epigastric region, although at the operation this part of the tumor was covered by the stomach. Langton reports a case on which he operated successfully, but three years afterward the patient died, and it was found that the scar tissue had entangled the portal vein so that there was practically no circulation through the liver.

Another obscure condition is subphrenic or perigastric abscess which is due to slow leakage through the floor of an ulcer tending to an encysted abscess, which may be discharged into the stomach and the pus vomited; or perforate the colon and give rise to a gastrocolic fistula, the special sign of which is fæcal vomiting without intestinal obstruction; or the pus may travel up behind or through the diaphragm and cause a foul empyema; it may burst into the pericardium and prove fatal, or into the lung and be coughed up. A subphrenic abscess may also point and burst through the abdominal wall near the umbilicus. The diagnosis of such a subphrenic or perigastric abscess is aided by a history of gastric ulcer, but there may be absolutely no history at all; the development of the abscess is indicated by the fever pointing to suppuration, and a collection of fluid and gas below the diaphragm, as shown by a tympanitic percussion note, and sometimes by emphysema or œdema of the skin. The abscess is generally to the left side, but it may extend up in front of the liver to the right; it bulges forward or pushes the diaphragm upward. It is difficult or impossible in some cases to distinguish a subphrenic abscess marked by pushing up the diaphragm from one that has already extended through into the thorax, but an early exploration should be made through an incision in front. A trocar or aspirator is useless; if pus is reached, an incision must follow; if there are no peritoneal adhesions, the withdrawal of the trocar may allow of pus escaping into the peritoneal cavity; a negative result gives no information and may result in harm by misleading. Generally, an incision is made in front and a tube or strip of gauze inserted, and when the abscess extends backward make a counter-opening behind and to the left. The thorax should be opened by removing a portion of one or more ribs, and the pleural cavity filled with gauze. If the pus is still below the diaphragm, this structure is fixed to the upper margin of the thoracic wound so as to shut off the rest of the pleural cavity; forceps are pushed through the diaphragm and the opening stretched.

A chronic gastric ulcer which has not yet perforated may call for surgical treatment on account of adhesions, hæmorrhage, pyloric spasm, and stenosis with dilatation, a bilocular or hour glass stomach, or stenosis of the cardiac orifice, but the question arises does the chronic ulceration in itself need surgical interference? Should there be severe and persistent pain after meals, with frothy vomiting containing mucous, shreds, etc., especially with loss of flesh, unrelieved by medical treatment, an operation should be advised. Remember that Fournier, Flexner and Mackay have described syphilitic ulceration and hæmorrhage rapidly cured by iodide of potassium, but in all these cases the patients have had well marked syphilitic manifestations. The object of the operation is, in the first place, exploratory; adhesions, pyloric stenosis, or a malignant tumor may be met with. An ulcer on the anterior wall, not close to the cardiac or pyloric orifices, with a thin floor but without much induration around it, may be folded in and fixed by a double row of Lembert's sero muscular sutures, with the object of obtaining atrophy of the invaginated portion. If there is marked induration preventing invagination, excision of the ulcer is indicated, the line of removal being carried through healthy tissue, while hæmorrhage is arrested by ligaturing any beeding point and then bringing the edges together by a suture passed through all the coats; this is covered in by a superficial sero muscular line of stitches. If a single ulcer can be felt on the posterior wall by passing the finger behind the stomach through an aperture in the gastrocolic omentum, the ulcer may be exposed through an incision in the anterior wall, cleaned of debris, and its floor seared by the cautery. When the ulcer is near the pyloric orifice, or there is widespread destruction or atrophy of mucous membrane, as shown by a diminution of hydrochloric acid, gastro enterostomy should be employed. The principal causes of adhesions are intrinsic, chronic ulceration being the comon cause. Adhesions may arise from extrinsic causes, such as injury, gall stone colic or umbilical hernia; also, gastric fistulæ, whether produced accidentally or by operation. The chief sign is pain, gastralgia in the epigastrium, exaggerated by movement, and gastric distension, generally out of proportion to

other symptoms and lasting for a considerable period; this pain may cause loss of weight owing to the patient not taking food from fear of causing pain, and there may be a rigidity of muscles, giving rise to the idea of a tumor. If the band compresses the pylorus, there are the special signs of pyloric obstruction; if the colon, then distension with chronic obstruction. It can hardly be said that the diagnosis can be definite; the operation commences usually as an exploration. A band may be found fixing the stomach to the abdominal wall, to the ring of an umbilical hernia, attaching the pylorus to the liver or to the colon. The thinner kinds of adhesions may be freed by dividing them between two ligatures, and so, by a comparatively slight operation, the patient be completely and permanently cured; if the adhesions are very extensive, if the pylorus is closely adherent to the under surface of the liver or gall bladder, it would be dangerous or impossible to separate them. Gastro enterostomy should be done, for the most successful results follow this operation.

It is well to remember that gastric hæmorrhage is not the same thing as hæmatemesis, for, to say nothing of other causes, the latter may be due to a leaking aneurism or varicose œsophageal veins; for this reason Terrier and Hartmann prefer the term "gastrorrhagia." Gastric hæmorrhage may be traumatic, as when blood appears in the vomit immediately after an injury; or blood appears in the vomit in connection with cancer, but the question of surgical interference with the special object of arresting hæmorrhage arises only in cases of chronic ulceration. A latent gastric ulcer may open into one of the large branches of the gastro-duodenal artery, usually near the head of the pancreas, with fatal consequences; or the patient may never vomit and the cause of death remain unsuspected until the post mortem. Again the patient may suddenly vomit a pint or two of blood besides what is passed subsequently as melæna; this hæmorrhage may be preceded by a sharp pain; or the patient feels suddenly faint, a sensation of rapid distension of the stomach with a warm fluid ensues, and then, with a scarcely perceptible effort, blood pours from the mouth. The patient is thus suddenly reduced to a state of acute anæmia in which she may continue, especially if there is a continual leakage. Here is an important problem: the patient has not died from the first unforeseen hæmorrhage, but will another occur, and, if so, will the second or some subsquent hæmorrhage prove fatal? The consensus of opinion is that gastric hæmorrhage rarely proves fatal, and that after one severe hæmorrhage, a subsequent one is not likely to prove fatal; but this question requires a thorough re-examination; it requires to be looked at from the standpoint of the surgeon, for the traditional view is probably a wide generalization in which all cases of gastric hæmorrhage are included, the slighter with the more severe. Chronic hæmorrhage, from being more often seen, impresses the mind longer than cases dying suddenly, in which no thorough post mortem examination having been made, the fact that it was due to hæmorrhage from an ulcer, which might have been amenable to surgical treatment, has escaped being recorded. There is not enough known to warrant surgical measures after the first severe hæmorrhage, although further observations may tend in this direction, especially, perhaps, by exploding the notion that one severe hæmorrhage may be followed by a complete and permanent recovery, but should a second severe attack of gastric hæmorrhage occur a surgical exploration should be made, for medical treatment alone cannot prevent its recurrence or do anything to actually arrest the hæmorrhage when it occurs. Moreover, the patient and friends must remain in dread of bleeding setting in at any time and two attacks of severe hæmorrhage can hardly arise except from a considerable ulcer which, even if it does not cause death by hæmorrhage, will eventually prove fatal in some other way, while less severe attacks of recurring hæmorrhage are due to small ulcers connected with the smaller arteries and veins at a little distance from the lesser or greater curvature, or are due to more or less widespread, yet superficial, excoriations of the mucous membrane, giving rise to capillary hæmorrhage. A patient weakened and rendered anæmic by recurring losses of blood, becomes emaciated from lack of food owing to loss of appetite, pain, vomiting, or fear of exciting hæmorrhage; if recurring attacks of hæmorrhage, anæmia and emaciation can only go on until some fatal complication is set up, a surgical operation is clearly indicated. The time for the operation is as soon as the patient is fairly convalescent from the last attack of hæmorrhage yet before he has fully regained a normal pulse tension. During the convalescence preceding the operation, the patient should be kept in bed on a semisolid diet with as little liquid as possible, the bowels well open, and iron administered. To operate during the acute anæmia is hazardous, for while bleeding is going on, even if small leakages are continuing, the patient is so weak that success is most unlikely and in the present position of affairs the future of the operation may be unduly prejudiced. Upon opening the abdomen if the source of the hæmorrhage is found to be a single ulcer, it may be possible to tie the vessels on the outer surface of the stomach which supply the ulcer, and afterward to tuck the ulcer in by sero muscular sutures, or alternatively the ulcer may be excised. If the ulcer is not made apparent by its induration, is on the posterior wall, or there are widespread excoriations, two courses are open, one to incise and explore the stomach for the bleeding point, the other to do gastro enterostomy. The exploration of the stomach is more severe, but the most satisfactory operation; for this purpose a free opening is made longitudinally midway between the curvatures, and by passing the fingers through the gastro colic omentum behind the stomach, the wall is pushed forward and the inner surface appears in the wound; the ulcer is cleaned of debris and foreign bodies and the surface is seared with the cautery. When there are only minute bleeding points or widespread excoriations, the successive portions of the inner wall must be examined under a good light, and any points likely to bleed touched with the cautery. In some cases, one of the larger gastric arteries may be tied on the outer wall of the stomach; the wound in the stomach is then sewn up. Pyloroplasty may be done if coexisting pyloric stenosis is present, while gastro enterostomy may be employed when the ulceration cannot be defined without opening in the stomach, an operation which the patient seems to weak to stand, its great value being to drain off excess of hydrochloric acid and the remains of food. It may also be done after the interior of the stomach

has been explored, when very extensive excoriation or marked pyloric stenosis, not likely to be cured by the simpler pyloroplasty, has been detected.

THE FIELD OF THE UNTRAINED NURSE.

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THE demonstration by actual experience, of the practicability and value of a profession of nurses, the growing influence of this profession and the recently enacted laws with regard to education in training schools and registration, have, very naturally, led to a movement to restrict the field of nursing to regularly licensed graduates, just as is that of medicine.

Such legislation naturally appeals to the professional nurse who is, herself, a hospital graduate as eminently desirable. This sentiment is by no means to be ascribed entirely or even largely to selfish interests, but results from precisely the same professional spirit and ultimately, the same philanthropic spirit, which has actuated the medical profession to secure analagous legislation, restricting practice by non-graduates. With this sentiment, the medical profession are apt to be in sympathy and yet, there is another side to the matter which deserves serious consideration. In presenting this side, the writer does not wish to pose as in antipathy to the aspirations of the nursing profession, nor as failing to appreciate to the utmost the scientific and practical advance of medicine due to the development, during the last generation, of a true nursing profession. There are, however, various extremely practical obstacles in the way of restricting the practice of nursing as is that of medicine.

First of all, the practice of nursing has been from the beginning and must continue to be, susceptible of greater specialization than is that of medicine. In theory and in law, the physician is educated and licensed as competent to practice all branches of the healing art. Actually, no physician is competent to do so, or, rather, no human being can be imagined as having such a breadth of talent and such mental acumen and physical strength as to be able to acquire even reasonable proficiency in all branches of practice, and certainly not in the four years required for medical training. As a matter of experience, we find that, with some exceptions, a sense of honor and selfish interest, lead each practitioner to limit his practice somewhat according to his tastes and abilities and to secure efficient counsel when any given case transcends his own powers. Some time, there must be a legal recognition and restriction of specialties and a relegation to specialists of certain kinds and grades of cases but, at present, the difficulties in the way of providing justly and efficiently for such cases, are too great to allow a change.

With the present training school course, or any such modification or prolongation of it as may be considered feasible, it is impossible to provide for the practical education of nurses on so broad a scale as is possible and as is actually achieved for medical students. Even from the largest general hospitals, having the greatest variety of cases under treatment, nurses are graduated with very great differences in training as regards individual diseases. Even in the same class, one nurse has had ample training in the care of typhoids, but practically none in that of the exanthemata; another has had a rich surgical experience, another very little, and so on. Again, while all medical schools that are to be considered in good standing at all, are very much alike in essentials, hospitals differ very materially, some being limited almost entirely to surgical cases, many excluding actively contagious cases, others having a disproportionately large obstetric service or none at all. Yet, these hospitals exist as a matter of practical necessity, they must have nursing staffs, must, under existing conditions, depend largely upon pupil nurses, and these nurses must be fairly treated by licensing boards. Thus, in private practice, the nurse, even more than the physician, must be limited in employment according to actual personal training and ability, in certain special fields.

If we accord the privilege of a license to the graduate of a training school very deficient in certain lines of practice, or even limited to a few kinds of cases, we must also recognize the plain facts that a single surgeon or physician, in or out of a hospital, may take a woman under instruction and train her to a high degree of efficiency as a nurse. In a certain sense, physicians may be similarly informally trained and, indeed, up to fifty years ago, many of our best physicians and surgeons were thus trained, by the system of preceptorship. That this system is no longer legally recognized, is due to the fact that more than the number of physicians needed can be better and more economically trained by colleges.

A very important distinction between the medical and the nursing profession in this regard is that the former is an executive profession, in which each individual must, for the most part, exercise an undivided responsibility as to the care of a patient, while the latter is avowedly and by its very nature, subject to the executive control of the former so that, excepting a line of work which is scarcely recognized as real nursing, the nurse never is called upon to assume such responsibility. Many surgeons and even physicians actually prefer specially and informally trained nurses to those graduated from hospitals. Another equally important distinction is that while in medical practice, theory holds a very important position, in nursing, the main qualification is practical experience and a certain innate tact and adaptibility which the training school may recognize in its selection but which it cannot impart to one lack-in it. Some predilection is also of advantage in medicine, yet many of our best physicians do not naturally like their work and have not, originally, shown the aptitude for medical study that might have been expected. On the other hand, many "born doctors," by reason of deficient training in medical schools or neglect of post graduate study, prove to be very mediocre practitioners.

As a general rule, thoroughly good physisians and surgeons are poor nurses, while good nurses, who afterward decide to study medicine, do not achieve success. This is natural; in any field of human activity, we find that the best executives are not usually adapted to work requiring attention to details and to regulation by others and vice versa. Moreover, general feminine traits tend to make women better

nurses than men.

The fact may also be mentioned that nurses who are well adapted to the routine and discipline of hospitals may make very poor attendants on the sick, while women who can scarcely retain their position in a hospital for more than a short time, may enter the practice of nursing without a diploma and yet prove to be most satisfactory nurses. It would certainly be unjust to such women, to debar them from a field of usefulness to others and of benefit to themselves. In some hospitals, the very endeavor to select nurses who will readily submit to discipline, results in a low standard of practical efficiency, simply because the nurses are too lacking in self-assertion and initiative in emergency.

Without going into all the reasons that might be mentioned, the fact remains that, for present practical purposes, thoroughly good nurses may be found who have not diplomas while, if the new requirement of a high school education for all nurses in training schools, is fulfilled, the writer prophecies that there will be a still greater number of unlicensed, but competent nurses and, conversely, a marked shortage of supply for hospitals.

There is also to be considered, the needs and abilities of the laity who employ physicians and nurses and, in this consideration, we must be careful to set aside fortunate personal experience, and to view the problem broadly. It is estimated—there are no accurate statistics available—that only about one-tenth of the population of this country, the richest in the world, have incomes of $1,500, $2,000 or more, per family. The great majority of the population lie between the extremes in which sickness or accident necessitates the acceptance of public charity in hospital wards and in which all the refinements of medical science and art are available, without any sacrifice at all or with a possible sacrifice of money saved for a rainy day. Now, while the physician, who sees many cases in a day and spends comparatively little time upon each one, may very readily adjust his charges to the means of the individual, the graduate nurse, devoting her entire attention to one case or a few cases in a house or hospital, at a time, cannot make the necessary discount to the person of average means—using the word average in its literal sense of a family income of a few hundred dollars a year—while, on the other hand, the patient of ample means, will not as a rule, pay more than the ordinary fixed charge of $20—$25 per week, which is about the minimum at which a competent graduate nurse can afford to work, allowing for necessary periods of lack of employment, the comparatively short duration of her professional career and the consequent necessity of providing to some extent for the future. Thus, the mere matter of distribution of wealth—and it must always be remembered that if the total wealth of the country could be kept equally distributed, no one would have enough for what we consider a modest but comfortable living—absolutely requires the employment of untrained or informally trained nurses.

It has sometimes seemed to the writer that this problem might be partially solved by a more general introduction of the system of visiting nurses, for such cases as require expert attention for only a short time each day or every other day, yet there are practical objections to this system. Nurses, as a rule, regard unfavorably and in the light of quackery, the visiting system. Just why this system is any less ethical for the nursing than for the medical profession, the writer is unable to explain. Again, as a matter of practical experience, nurses awaiting a call to permnent case, have usually charged for brief attention to a case requiring only such care, about two-thirds of their full charge for a case requiring their entire time. Without any desire to belittle the value of the services, the hard economic fact remains that such a charge is still higher than the average patient can afford. Again, the writer would remind his readers that the word average does not refer to the average within the experience of trained nurses nor of his own practice, but to the community as a whole. Moreover, the saving of a third of the expense of a nurse, not including board which is usually disregarded in private families, does not amount to much when the additional luxury of attendance throughout the entire day is considered. Again, the two-thirds charge, comes in direct and unfavorable competition with the entire charge for a private room in a hospital, with board and medicine, and any reasonable attention from the nursing staff.

Quite aside from any absolute financial inability to employ trained nurses, there are a great many cases in which practical convenience suggests the employment of a nurse of an entirely different grade. Among the small percentage of our population who possess ample means and who have commodious homes, such considerations do not often arise and, indeed, we often find trained nurses employed by families of wealth, as companions, attendants upon healthy children and as housekeepers, etc. Still, the matter of convenience does frequently come up as a factor against the employment of a graduate nurse, in families of more than average means who could and would afford trained attention in a grave case of typhoid fever or pneumonia, a surgical case, or a difficult labor.

However willing the graduate nurse may be to accommodate herself to circumstances, to make herself generally useful, and to show her true dignity by waiving an insistance upon minor privileges and courtesies, she is always in theory and usually in fact, a gentlewoman, who must be treated with consideration, who cannot be called upon for purely menial service and whose advent into a humble although fairly prosperous home, does necessitate a considerable change of routine and involve much trouble, not to mention expense of a direct nature. The majority of us work because we have to, to earn a living, and if the nurse will stop to think of what her advent would mean as an entire stranger, into her own home, when it is disturbed by sickness and when hospitality is at a low ebb, she can readily understand the allusion. And, in the same way, we physicians ought to consider how the expense of our own services and of other necessary items in case of sickness, impose hardship upon all but the five per cent. or so of the population who are well-to-do, and we should avoid the suggestion of unnecessary sacrifices.

A good many families of fair means, visited with mild sickness or surgical accident are placed in about this position with regard to the employment of a trained nurse: There is no bed-room for her that is suitable, and her advent means the turning out of

some member of the family. Possibly there has been a guest chamber, but it is needed for the patient or for some relative summoned from out of town, or the guest has accidentally become a patient. A surprising number of flat dwellers, have no regular spare room, but make some temporary shift or use the parlor to accommodate the guest. Often there is no servant, and a good strong woman to come in and do housework and assist occasionally in lifting the patient, is really more help than a nurse. Even the extra laundering which a trained nurse requires, may be a very appreciable drawback, although it seems like a very small item. If a servant is kept and more assistance is needed, it is often a great relief to employ some one who can be lodged with the servant and who can be asked to help in various menial capacities.

In other cases, especially when the family or individual boards, day help is often a desideratum. In any of these cases, we have supposed that the services of a nurse were not so much needed as unskilled help to relieve the amateur domestic nurse from household cares. In others, of no great severity, it is really necessary to have an attendant for the patient, and yet, for one or more of the reasons given, all ultimately economic, a graduate nurse is dreaded. For such cases, so-called trained attendants have been instituted in some places. These are taught to take temperatures and pulse rates, give ordinary enemata, to rub upward instead of downward, to use bed pans gently, to know that there is such a thing as a bed sore, to give hypodermics and to be neat and quiet in the sick-room.

Now it is perfectly obvious that an untrained or partly trained nurse cannot take the place of a duly graduated nurse and that, in serious cases of any kind, the services of the latter should be insisted upon and, if the circumstances are such that the patient cannot command them at his home, he should go to a hospital. Moreover, when the circumstances are such that it is practically immaterial economically whether a trained or untrained nurse should be chosen, the physician should give his patient the benefit of the doubt by insisting on the former. On the other hand, the attempt to restrict the practice of nursing to graduates, after the analogy of medical practice, is not only impracticable on account of legal difficulties, but, if feasible would work genuine hardship and, in many instances, would be equivalent to declaring that the patient could not have any nurse at all. On the other hand, the untrained nurse cannot expect legal recognition nor affiliation with nurses' organizations, nor a fixed standard of remuneration, but must seek employment on her individual ability in cases of relatively minor importance.

Bodington, in 1840, wrote an essay on the treatment of tuberculosis on "principles natural, rational and successful." The *Lancet* published his essay in that year; and has recently reprinted it. One finds here the basis of the present day sanatorium plan of dealing with this disease. Bodington established his own institution at Sutton-Coldfields, in England, but his neighbors objected so vigorously to his beneficent enterprise that he had to abandon it. By a strange irony of fate, relates Latham, he turned this institution into an asylum for the insane.

SURGERY OF THE BLADDER.

BY J. LEE FOWLER, M.D.

PART I.

THE absorptive power of the bladder and urethra is a matter of great dispute. Bazey found that injections of poisons in the bladder killed animals with as great certainty as if made into the rectum or subcutaneously, chemical and microbic poisons being used. Cocaine, strychnine and hydrocyanic acid killed animals in a few minutes; while belladonna, curare, and pilocarpine produce their effects much more slowly. Pneumococcus injected into the bladders of six rabbits produced a fatal result in five instances, three dying in five to six days with pleural and peritoneal exudations without renal lesions. Maceration of gangrenous muscle by the septic vibrio, after being passed through a Chamberland's filter, was injected into the bladder of a rabbit, and the animal died in twenty days; water appeared to be absorbed by the bladder also. Urethral absorption appeared to be very active, while that by the ureter was less; but when the tonic fluid reaches the level of the calices death depended on the size of the dose.

The mortality from traumatic rupture of the bladder has during the last fifteen years been reduced from 90 to 54 per cent., due to early operative interference; the two commoner forms of rupture—the intra peritoneal and the extra peritoneal having a different death rate. In a series of thirty-four intra peritoneal ruptures fourteen recovered and twenty died; of eighteen extra peritoneal ruptures ten recovered and eight died. Coexisting fracture of the pelvis, of course, adds to the gravity of the case. The most important symptoms of intra peritoneal rupture of the bladder are a peculiar pain felt at the time of the injury, chilling of the surface of the body which may persist, an urgent desire to urinate which the patient cannot satisfy, the absence of any vesical swelling above the pubes, the absence of urine in the bladder or its existence in a very small quantity. Where doubt exists as to the seat of rupture the median suprapubic incision should be used, the peritoneum only opened after the cavity of Retzius has been explored; suture should be attempted in every case, if possible. Sieur believes that surgical intervention should be practiced in every case of vesical rupture, whatever the form of injury, unless there has been either very intense nervous shock or the patient has been reduced to a hopeless state of urinary infiltration. Cellulitic abscesses do not frequently burst into the rectum, vagina and bladder, and many of the cases quoted belong to a time when little was known of the pathology of pelvic inflammations. The following interesting case is given as an illustration of this by Cullingworth: The patient, a woman of thirty-two, married nine years, had never been pregnant. Six months before admission to the hospital she had what was supposed to be an attack of influenza. She kept her bed for a fortnight, and then went into the country. While there she noticed some thick, yellow matter in her urine, which continued in amount to half a fluid ounce. She had suffered pain from time to time in the right iliac region, but this had never been very severe. On examination the uterus was found of normal length, the canal directed to the left. A large, hard, uneven, roughly globular mass was felt on the right side of the pelvis depressing the vaginal roof and extending upward to

the level of the anterior superior iliac spine. Laparotomy was performed, adhesions separated, and an inflamed right Fallopian tube and a suppurating cystic ovary, three inches in diameter, were removed. On the under surface of the ovary was a small opening, from which blood-stained purulent fluid oozed on pressure, and which probably represented the aperture of communication with the bladder. No attempt was made to close the opening in the bladder. The urine, subsequently withdrawn by catheter, contained blood and pus. The catheter was used every two hours at first. These continued a little suppuration from the lower angle of the wound for six months, when the sinus finally closed.

Diagnosis of tuberculosis of the bladder rests upon the discovery of the tubercle bacillus and clinical experiment; the first condition so often fails that the second is better for positive diagnosis. This consists in the injection of some of the urine into the eye, the joint, and the pleural or abdominal cavity of a rabbit. Koeing used this method before the discovery of the tubercle bacillus, and even yet it is the surest and easiest diagnostic help where the identification of the germ has not been satisfactorily made. Some urines from patients who are on clinical grounds diagnosed to be suffering from tuberculosis are very pale and nearly clear; so clear, in fact, that doubt is often cast upon the correctness of the opinion, but in one or two cases in which nearly clear urine was being passed, a fresh sample induced tuberculosis in animals. Bardenheuer has dissected away the centre mucous membrane of the bladder in three instances for tuberculosis of that organ. This procedure was followed by contraction of the bladder and incontinence of urine.

Keen suggests that in renal colic the bladder should be systematically, as a routine practice, washed out with a Bigelow evacuator, if the stone is not discharged within a few days, while in a valuable article on the comparative safety of suprapubic lithotomy, of lateral lithotomy, and of litholapaxy in young males, Barling, by statistics gathered from six London and six provincial hospitals, shows that the mortality after the suprapubic is greater than after the lateral operation—17.4 per cent. as against 5 per cent. Fenwick drew attention to the difficulties in sounding for stone in cases with much enlarged or in irregularly enlarged prostate, for calculi were sometimes so deeply fixed behind and below an upraised median lobe or collar that the sound introduced per urethram could not reach them, however much rotated it was, or however forcibly it was thrust toward the base over the lobe. Harmful pressure was often exercised upon the prostate, and cystopyelitis and hæmorrhage were apt to ensue. Fenwick suggested that whenever the prostate was very large or difficult to traverse, or if it bled easily, that an aspirator trocar and cannula should be thrust suprapubically into the full, cleansed bladder, the trocar replaced by a loosely fitting blunt pilot, and the post prostatic pouch and bladder base carefully prodded with this instrument to ascertain the absence. To drain the bladder suprapubically a larger trocar and cannula could be employed, and through the latter a straight electric cystoscope, which he had had made, could be introduced into the washed out bladder, and the interior examined. Fenwick advised this latter procedure in cases of much enlarged prostate in which a suspicion of benign growth existed; for in these cases the ordinary cystoscope could not be used. If a stone or benign growth was discovered, a director could be passed through the cannula, the latter withdrawn over the director, and the bladder opened by a limited incision on the director. The disease could then be dealt with and the bladder drained, this method of sounding and cystoscoping would save exploratory suprapubic cystotomy, which was a severe procedure in old age.

Freyer has published the results of a series of eight hundred and fifty-two operations for stone in the bladder by all methods—namely, two hundred and forty-five by perineal lithotomy, six by suprapubic lithotomy, three by rapid dilatation of the urethra in females, and five hundred and ninety-eight by litholapaxy, or "lithotrity at one sitting," as the operation is sometimes called. These latter five hundred and ninety-eight cases removed by Bigelow's method demonstrate what a vast influence the modern operation has had in ameliorating the sufferings and diminishing the mortality attendant on stone in the bladder. Fryer has abandoned the use of all but fully fenestrated lithotrites, considering the use of any other kind almost unjustifiable, considering the danger that exists of débris getting impacted in the jaws of non-fenestrated instruments—an accident which cannot occur with fully fenestrated ones when properly used. The use of the lithotrite in the modern operation is to crush the fragments, but not to fish them out.

Nocturnal enuresis is a difficult and often baffling affection to treat. Thursfield (*Clic. Jour.*, Oct. 11, '05) has used urotropin in thirty cases, with good results in nine. It must be given well diluted, otherwise the patient may have renal pain and hermaturia. Ten grains in half an ounce of water, to be further diluted with a wineglassful of water, t. .i d., is the best method of using it. Acid urine requires potassium citrate, gr. xv. ℥i., t.i.d. Belladonna is, after all, the most useful drug, given either as the tincture, the extract or as liquor atropinæ. It must be given in large doses and over a long period. Ten minims, t.i.d., might be raised rapidly to thirty or forty minims or even a drachm, t. i. d. As the dose is increased the frequency of the enuresis will diminish; after from several weeks to two or three months it will cease. The drug should then be continued another month, and the dose gradually diminished. By the time we have cured the enuresis we are about half way through with the case. There will be midriasis, on account of which the child may have to be kept from school, and dryness of the throat, with sometimes a smarting sensation in the pharynx and mouth; but these symptoms are inconsequential if relief of the enuresis is obtained. In excitable children potassium bromide is added to the belladonna at bedtime, and those who are anæmic or ill-nourished have also iron, arsenic or strychnine. When these measures fail electricity may be tried—a foradic current, with one pole in the urethra, the other on the abdomen or back, usually finishing with a few make-and-break shocks of the constant current. (We deprecate any form of treatment which requires manipulation of the parts. See item on Enuresis in our March issue.)

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Life is a series of surprises.—*Emerson.*

THE MEDICAL PROFESSION'S GROWTH INTO A BUSINESS FORCE.

THE recent meeting of the American Medical Association in Boston has served again to illustrate the fact that the profession as a whole is growing into touch and sympathy. There was a time when many physicians felt it beneath them to take active part in society work, especially when that work was to force certain issues. It seemed to these sensitive individuals that it savored too much of trade unionism. But this is not so to-day.

The active practitioner is alive to-day as never before to his dangers and responsibilities and he has learned one thing, which is that his profession can do as a body what is impossible to him as an individual. There has been most skilful development of this idea by the association itself in the past five years, and the labors of these pioneers is now beginning to bear fruit. Dr. McCormack has done colossal work in cementing the profession together. It seems strange to feel that one man could do so much, but we must remember the harvest was ripe for the reaper's blade. His work would be impossible to accomplish if it did not meet a response to an immediate need in the bosom of the profession.

Already practical evidences of this close association is shown by the vigor with which physicians are now attacking certain problems. Thus the question of the fee for examining applicants for life insurance is before the profession. It should be met decisively, emphatically, and with dignity. No part of the censure of the recent investigation of the insurance companies fell on the medical departments: their work was already done efficiently and economically. No money has ever been squandered or lost in the medical department of any company. Yet when the cry for retrenchment goes down the line, the medical departments are forced to a larger reduction even than the departments which have been under fire and were found lacking.

What is the reason for this? It is simply due to the fact that in the past the heads of the various companies have found physicians as putty in their hands. The average manager of the average insurance company has a contempt for the business ability of the average physician. He feels that no matter how badly the medical examiner is treated or paid, the faithful doctor will slink back like the faithful dog to the hand which chided him. This is shown more clearly in the manner in which nearly all companies treat their employees. The companies have special bonuses for good work, faithful services and intelligent co-operation for their agents, cashiers, agency directors, etc. This took the form of money prizes, of prizes in merchandise, of trips to various resorts, etc. These prizes and encouragements were for all branches of the service except the medical department. The men here were expected to be most faithful, most intelligent, most honest, all without any encouragement, despite the further fact that in the start they were the most poorly paid employees in the company's employ.

All insurance companies place little time on the medical examiners. They may lose sleep over the prospect of getting good agents, good agency directors, or honest, efficient cashiers; but the medical department runs itself, for if the present examiners are dissatisfied, the officers see a vista of hungry applicants beyond, all ready for work for any pittance doled out.

The president of an accident insurance company in Maryland recently wrote the editor of the *Journal of the American Medical Association* a letter, in which he justified the trifling sums paid for various operations the company wanted done, by the statement that they could get good work from good men at these prices. As a business proposition he failed to see why they should pay more. This is cold, hard reading for the physicians, but it is undoubtedly business. If the company can get good work done at starvation prices, they undoubtedly have the legal right to pursue that course. But the duty of the profession is to see that they can not get good work at such prices.

The so-called less intelligent trades have already found that co-operation and union is necessary for their existence, else they would be ground and torn to powder. Slowly the physician is learning that it is not beneath his dignity to do the same. We must work together if we would advance.

We have here an excellent chance to impress the business world, especially the insurance world, with a display of intelligence and strength. Let the doctors sign this new declaration of independence. Let them show that their backbones are no longer made of gela-

tine: let them stand out for their rights and their rights will come. Once let the officials of a company get the impression that a good doctor will not work for less than a certain price and he will be the first to suggest that that price be paid. The basis of all insurance work rests on the medical department; the officials know this and they are intelligent enough not to jeopardize that security when they learn that after all doctors have backbones and some glimmerings of business ability.

PHYSICIANS AND "WHO'S WHO" IN AMERICA.

THE recent publication of "Who's Who in America for 1906-1907" has again brought an interesting work to public notice. It is a difficult task in a country with such loose lines of distinction to pick out the men and women of distinction. In the first place, it is hard to define what constitutes a celebrity. A man may be famous in a city or a state, or in a certain class of workers, and yet be utterly unknown outside. Thus some years ago there died and were buried on the same day the famous poet Walt Whitman and the great surgeon Dr. Hayes Agnew. Both lived in or near Philadelphia, and it was curious to note the difference in their fame. Whitman led in Camden the life of a recluse, in an obscure part of that town. Agnew was active in the public eye, and lived in the most fashionable part of Philadelphia. Locally there was no comparison as to fame: Agnew completely overshadowed Whitman. Whitman was not known to Philadelphia's masses and Quaker City literati were not in sympathy with him. As a result Agnew's funeral might have been compared to Lincoln's. It attracted thousands and held a great city in sorrow. Whitman's was attended by a faithful few on Camden's outskirts. Yet away from Philadelphia, Agnew's fame grew small and Whitman's waxed large. Thus in *Harpers' Weekly* Whitman was given a full-page illustration as a frontispiece, while Agnew's face was tucked away on a modest inner page at the head of a single column. Thus at different points the fame of these two men was of varying shapes and importance.

The work has attempted to solve this problem, and is probably the most successful effort yet produced, for insertion is not made for subscription or solicitation. The candidates are selected by the home office and inserted whether they buy the work or not. This is as it should be. The average book of popular citizens simply represents the energy of the canvassing agent. So the book may be accepted as an impartial guide.

According to this work there are 16,216 persons of more or less national importance. Of this number 1,704 are foreign born, and eight were born at sea. This shows that about ten per cent. of our famous people are foreigners, which is an excellent showing. Of these foreign-born, over fifty-six per cent. were born under the British flag; this is not so much a recommendation of England as of the fact that the knowledge of the English language is essential to success.

The largest number of famous people born in one state is found in New York, with 2,857. Not content with their native born, New York City has attracted 1100 more, so that there are nearly 4,000 famous people within the boundaries of the Empire State. This is true of only one other state, Illinois, where a native collection of 607 is augmented by an immigration of 400 more, due to the attractive powers of the Windy City. The next state in point of celebrity is Massachusetts, with 1,603 native well-known people, but the Bay State has lost nearly 200, probably by attraction to New York, where a wider field awaits their activity. The same statement is true of the third state, Pennsylvania, where with 1,432, only 1,192 remain.

Next comes the Buckeye State with 1,100 famous sons, of which only 600 remain faithful to their native soil. From here comes quite a drop to a group of states with about 400 famous children, such as Connecticut, Vermont, Virginia, New Jersey, Indiana, etc. In this list it is remarkable how many physicians are found; thus in glancing through the work on almost every page can be found well-known medical names, while Osler's famous dictum as to forty and sixty years receives another fierce attack.

It is the physician who writes who receives national attention. It is as necessary for the successful doctor to write as it is to practice, otherwise his fame is purely local. All the great minds of the medical profession were or are prolific writers. With their pens they can reach thousands where their oral words or actions influence only tens. Of course a physician can rush into print too much, but the average practitioner errs too much on the negative side. There is in every physician's experience much valuable data which would help the world if it were but published.

BACTERIOLOGIC IDENTIFICATION.

UP TO about a year ago, syphilis, though one of the commonest of diseases and unquestionably due to a germ, was of unknown origin. Within the year, of some 360 cases carefully examined, the spirochete pallida has been found in all but about 60. This germ has even been found in tertiary acquired cases and in late hereditary ones, that is to say, where infectiousness has usually been absent so far as clinical testimony goes, and where the lesions have usually been considered to represent the path of a desolating infection, rather than an active infectious process. The spirochete is of fair size as compared with other familiar bacteria and, while its second (specific?) name *pallida*, suggests a reason for its previous invisibility,

the staining methods adopted are not especially difficult or out of the ordinary.

Indeed, the best reason for being sceptical as to the genuineness of the present germ of syphilis is the very ease and frequency with which it is now found, as compared with the former failure to find it in lesions widely accessible for study by any bacteriologic student in almost any part of the world and under circumstances that rendered it practically certain that there was a germ to be discovered and that offered fame for the man who should first discover it. Many elaborate and apparently thorough studies, with modern apparatus and skill, apparently proved that the syphilitic virus was ultra-microscopic, at least that it would pass through certain porcelain filters, yet the spirochete is by no means ultra-microscopic nor capable of passing a properly constructed bacterial filter.

By these remarks, we do not mean to be understood as disbelieving in the specificity of the spirochete pallida. In fact, we are personally incapable of expressing an opinion on the subject, although we possess a diploma from one of the best medical schools of the country to the effect that we are a competent bacteriologist. The diploma, not being truthful, is consigned to oblivion.

But we do wish to use this particular disease to point the general moral of the fallability of bacteriologic—or let us say micro-organismic—identification. Bacteria and protozoa may be identified, in theory, in five ways: morphologic peculiarities, staining reactions, chemic products of the living organism, gross appearances (including low-power microscopic appearances) of crops of the germ grown on culture media, inoculation experiments, agglutination experiments. Any one of these may be fallacious. While even a person of ordinary experience and not necessarily a botanist or zoologist, may, on simple macroscopic appearances, declare positively that a certain plant is wheat and that a certain animal is a grizzly bear, we believe that there is absolutely no bacterium and only a few protozoan parasites that can positively be identified by morphology alone. Staining properties are pretty nearly absolute with regard to the gonococcus and to the tubercle bacillus, provided that the leprosy bacillus and certain fat-containing non-pathogenic germs can be excluded. The time, color, and manner of growth of cultures are more or less distinctive for a number of germs. Inoculation experiments with production of the disease and recovery of the germ, are nearly positive, but negative results do not necessarily disprove its presence for a number of reasons. Agglutination experiments are not absolutely convincing and, indeed, it is already known that in some instances mutual agglutination may occur in related groups. The chemical products of bacteria differ according to the soil and temperature, etc., just as they do for macroscopic plants, for instance the cinchona which does not produce quinine in any quantity in the Carolinas, and the coffee plant whose flavor in America is very different from what it is in Asia.

In many instances, a combination of probable points of evidence, enables a bacteriologist to assert positively the identity of a germ in question. But this positive statement can be made only when experience of both technical and clinical nature has been in accordance for a considerable number of years and a considerable number of independent lines of research by numerous observers.

Given a disease of unknown cause, investigated bacteriologically by an inexpert bacteriologist, and it is almost a foregone conclusion that a germ will be isolated whose description does not correspond exactly to that of any previously known germ that may be accidentally present. Given a pure culture of a definite germ, investigated under different conditions by the same or different observers, and no two descriptions will exactly coincide. Entirely different germs may appear to be the same, and conversely, the same germ will develop different forms and reactions. Even a professional bacteriologist is relatively inexpert, when dealing with an unfamiliar germ. Authorities have described nearly a thousand different bacteria, not to mention fungi and protozoa. About 50 apparently distinct infectious diseases exist, aside from local conditions due to fungi, and including as one disease, various septic fevers clinically indistinguishable. Twenty-three general infections are pretty definitely assigned to bacteria, three to fungi, 10 to animal parasites of protozoan nature or to immature stages of helminths, twelve are of unknown cause, and several are more or less probably well known infections with symptomatology altered by local conditions. It is exceedingly difficult to make such statements in exact figures. For instance, we have included scarlatina and syphilis as due to discovered parasites, measles as of unknown origin, trichiniasis has been considered as truly a general infection as filariasis. Yaws has been considered syphilitic and bacillus capsulatus ærogenes infection as specific, while streptococcic and staphylococcic infections of different kinds have been grouped as sepsis. No two statisticians would agree in the count nor could the same individual, at different times, make the same distinction between demonstrated and claimed specificity. Very probably there are two quite distinct tuberculoses, and it is possible that the exanthemata are variations of the same infection, that mumps and pertussis are not specific at all but due to various infections of the respective regions.

Many bacteria, ordinarily non-pathogenic, are capable of producing disease. This is notably true of the

colon bacillus. We must remember that bacteriology is merely a division of botany and that, by a natural extension of terms it is practically applied to the zoology of many microscopic animals. The classification, particularly as regards genus and species of the microscopic animals and plants concerned in the production of disease and of analogous animals and plants widely distributed but not definitely pathogenic, is at present in a hopeless state of confusion. Moreover, parasitic organisms in general are degenerate, peculiar in morphology, often closely resembling widely different organisms and often lacking characteristic organs of closely related organisms. For example, the bindweed has its bracts, the morning glory its flower of flame, the dodder has no foliage leaves at all but is a convolvulacea, just the same. Now in the case of a complex organism like the dodder it is easy to trace its relationship to other convolvulaceæ and to explain its lack of leaves by its parasitic habits, but, in the case of a parasitic bacterium or protozoan, the minute size and lack of specialized organs renders it possible that utterly unsuspected relationships to other organisms exist.

AMERICAN MEDICAL ASSOCIATION IN BOSTON.

THE most notable feature of the recent meeting was the opening address made by Dr. Mayo, the President. Many matters vital to the physician were touched upon. Medicine, he declared, is becoming more and more an exact science, and this should come to pass as speedily as may be, for thus far medicine has been, of all the sciences, most laggard in the march of progress. Especially is it necessary that a science of therapeutics should be developed; it is not creditable to us that we continue, in so large measure, to be putting drugs of which we know little into bodies of which we know less.

Our giant strides of late years have been in the way of prophylaxis and sanitation; and we have been very successful in educating the laity in the causation of such diseases as malaria, typhoid, tuberculosis and yellow fever, and in the ways by which such diseases as these can be prevented.

Some abuses from which we suffer were dwelt upon by Dr. Mayo: the inadequate remuneration in life insurance work; the evils of lodge practice; the outrageous manner in which public service corporations make use of hospital privileges; the shameful way in which rich hospital patients have the surgeon to operate on them, or the medical man to take care of them as though they were charity cases; the fact that most hospitals have no physicians among their directors; the commission evil, by which the specialist divides the fee with the family practitioner in return for reference of the case. All these abuses have been rife among our professional forbears as they are among us; and our medical posterity, we fear, are going in like measure to experience them—unless some such body as the American Medical Association decides to do away with them. That is what the American Medical Association is for. All these abuses thrive, if not by our own connivance, at least by reason of our own complaisance; and they can be eradicated immediately a potential collection of medical men attacks them in good faith.

The sections devoted to medicine, surgery and the various specialties were most important, as our clinical columns during several months hence will attest. A valuable feature in these meetings is that the rural doctor meets the man of the laboratory and the world-famed writer upon professional themes—and finds him not so awful a personage after all; while the latter learns to appreciate the stamina of his bucolic brother.

Socially, and with regard to the good things of this life, the sessions were enormously successful. Our Boston colleagues were most hospitable. Boston cold, haughty, superior? Preposterous; likewise nonsense in the last degree. Boston is much maligned in such expressions. There never was such cordiality, such emollience; never were five thousand physicians, their families, and their sisters, their cousins and their aunts so warmly, so heartily entertained. The red cross badge was an open sesame to all things imaginable that were wholesome and enjoyable. The reception evening was most brilliant. Some one hundred of our Boston colleagues sang several concerted songs; and if their medical attainments are up to their voice production, they will do very well indeed. There was an excellent band; and dancing, too, of which many a graybeard took advantage, who had perhaps imagined his dancing years were over decades ago. And the Thursday evening "Pop!" And the teas in the new Harvard Medical School—most wonderful sight of all. This institution has certainly not its equal in the world. Nine enormous structures of white marble, built in the classic style, bound a vast space, in the midst of which were placed a band of many musicians. The thousands of visitors in holiday dress made a most picturesque appearance; it seemed indeed, as the French say, that the "whole world and his wife" were out enjoying themselves. At hundreds of tables these visitors sat while the young ladies of Boston served tea and ices. It was a wondrous sight, these many scores of bright, winsome gentlewomen, in pretty costumes, with red-ribbon shoulder straps, flitting about like—for further sentiments consult our bachelor confreres. They will expatiate upon the slightest provocation.

It is a pleasure to note that Dr. Joseph D. Bryant, of this city, was made president-elect.

Atlantic City, 1907.

VEGETARIANISM.

IT is an unpleasant aspect of cosmic life that all living creatures, from microbe to man, prey and feed upon one another. Nay, more than this, the process seems to extend far back of what we call sentient existence, back even to what we perhaps erroneously term inorganic matter. Let us begin with the granite in the hillside, which is made up of carbon, oxygen, hydrogen, nitrogen, and the like. In the course of æons does this rock undergo disintegration and become the soil in which plant-life may thrive. Indeed, even in the rock we will find sentient existence, animalcular, microscopic—but nevertheless manifestation of life is here found. In the soil, under solar influence, seeds germinate and thrive; and vegetation results. Then, as Paulson so well puts it in his introduction to the study of Philosophy, somehow (we know not the manner of it) under the influence of the "vital principle," concerning which we discourse so wisely, but of the nature of which we are absolutely ignorant, minute animal life appears, and in order that it may exist and multiply, subsists upon the vegetation about it. And so the field mouse thrives upon the grain. Presently there appears a larger animal who kills and eats the field mouse, in order that it may itself be nourished and exist. And thus does this cruel process in nature go on constantly, the stronger animal destroying the weaker. Thompson-Seton was criticized that in his stories his animals all died tragic deaths. But he quite rightly justified himself by the statement that such is the case in nature; that seldom does an animal die a natural death. This is life. The highest type of living thing—at least so we complacently hold ourselves—cannot escape this law of life. The cattle which we eat must suffer in order that we may subsist; they have to, for we are superior to them in this at least—that we know how to destroy them for our benefit. They are a great convenience for us, as well as a necessity. Their huge digestive apparatus can convert the grains of the field into a form which we find easily assimilable. We do not now kill the steer in the unpleasant fashion of our primitive ancestors; we simply relegate this business to certain of our brethren who are ready to undertake exclusively this indispensable function. But the principle is the same. It is Mother Earth's roundabout way of supplying us with the elements essential to our existence—the carbon, the hydrogen, the oxygen and the rest, which lie dormant in the great storehouse of nature.

We set forth here quite an obvious and fundamental proposition, but it is one which the vegetarian constantly ignores in his philosophizing. There is no use in ignoring or in defying the great and inexorable fact of life. Some vegetarian experiences are rather diverting as illustrating the extent to which a well-meaning citizen will go in a "logical course" based upon mistaken premises. There are those, for instance, who begin with eating no meats; presently they eschew eggs and milk, considering it a shame to deprive the hen and the cow of provender which is their own, and of which they should not in justice be deprived. Next, perhaps, the enthusiast is taken in hand by a missionary of "sun-kissed food." He eliminates everything that does not grow in the full sunshine. Clearly, potatoes and turnips are just as bad as a steak or a leg of mutton. A scientific statement or two are not here amiss. Rottermann, of Cincinnati, declares that most vegetarians have dilated stomachs and intestines, resulting from the accommodation of large quantities of food necessary to supply their wants. The powers both of resistance to great exertions, as well as the neutralization through the activity of organic cells, leucocytes, etc., the poisonous influence of disease, is much decreased, while convalescence is considerably prolonged." Swan, who has studied the *metabolism of a vegetarian,* finds that such diet is not calculated to produce a properly nourished and mentally and bodily active person. He finds that the literature advocating vegetarianism contains no accurate scientific analysis of the requirements of the human organism; and the arguments advanced in favor of such a regimen are either pseudoscientific or sentimental.

THE FAMILY DOCTOR.

IN a volume entitled "Home Thoughts," a series of papers reprinted from *The Evening Post,* there is one of a very emollient sort on "Our Friend, the Family Doctor." This writing flows evidently from a kindly and appreciative feminine pen. For instance: "A wife may plead with an obstinate husband, a mother argue with an imprudent daughter or a reckless son, and find that her efforts have no more result than that which spray may have upon a New England rock; but let the medical man get his hand upon the pulse or his trained ear over the lungs, and the whole face of things is changed. No more late hours, no more dancing in thin gowns, no more nightly revelling. It is a study worth pursuing, this yielding of the strong, this sobering of the frivolous, this checking of life's waste, at the bidding of a man whose only authority lies in respect for his profound knowledge and confidence for his truthful speech. If ever one needed a demonstration that knowledge is power, here it is."

Here, we submit, is presented a noble picture, and one which should be inspiring to the medical neophyte. Here are circumstances under which the character of the individual physician is his best, and at the same time his most paying, asset. In other kinds of work the assets may be incorporated from many

sources; "mergers" can be made whereby the strength and the skill of many individuals can be combined in ways oftentimes disastrous to the individuals whose resources have been appropriated. But the physician of character and stamina is, in such measure as he has these qualifications, master of his own output. When people are ill and near to death, they have no need of syndicated medical advice; they want the help of a doctor whom they love and trust, and whose thorax contains the heart of a man.

Here a defect in some medical temperaments may with advantage be considered. "Eagerness of research and thirst for provings have altered somewhat the course of medical thought," declares the genial writer to whom we have referred. In the work of some medical men investigation takes the place of pretty much everything else. "Men become specimens" in the eyes of such an one, who is "less eager to prolong the beating of a laboring heart than to know why it threatens to stop its work. Experiment, which teaches, is too dear to the discoverer, the opportunity of research too precious in his eyes, to leave room for ministry to the agony of hearts whose only disease is grief." Here, we think, is voiced an opinion rather prevalent among the laity; and justly so in many instances.

INSECTS AS DISEASE CONVEYERS.

THE very considerable part which insects play in the dissemination of disease has of late years been made manifest. It is *a propos,* the good old summer time, being now well upon us, to consider the manner in which the insects which are rife in our latitudes may convey germs.

Unquestionably the Koch bacillus is distributed by flies. No one can doubt this who has seen the photograph shown in the recent Tuberculosis Exhibition in New York City, depicting a nutrient plate upon which had been deposited a fly that had previously walked in the sputum of a consumptive. A glass cover confined the fly. The plate was at first perfectly clear; presently, however, colonies of bacilli perfectly visible to the naked eye developed along the tracks made by this fly. Unhappily some of our colleagues, supersaturated with enthusiasm, have jumped to the conclusion that the fly is the only, or at least the chief propagator of tuberculosis. It is, for many reasons, a very subsidiary source of tuberculous infection—especially because we have flies with us only a part of the year, whereas consumption is with us throughout the year and becomes contracted in one perpetual round. The physician should here most emphatically guard against this, as other factors tending to increase phthisiophobia among the laity such as is already rampant to so deplorable a degree. Unquestionably flies help greatly to swell the infant mortality rate, in cities, at least. There are few more congenial culture media than milk, especially amidst the uncleanliness which obtains in the homes of the very poor. This fluid easily becomes contaminated with the excreta of flies and with the noxious matter clinging to their feet. Tuberculosis is thus in a measure contracted by children. It is quite certain, also, that infantile diarrhœas are thus induced.

It is the custom to blame the venders of milk, from the dairyman to the retail dealer, for many of its impurities. To-day, however, thanks to the work of the Health Department and the County Medical Society in New York City, such impurities are rare; milk is now undoubtedly much more liable to contamination after delivery to the consumer.

Flies certainly disseminate typhoid, although there are, of course, other sources of this infection. Flies pollute food and drink by means of the excreta which they convey from dungheaps, manure pits and the like. Typhoid has with some fitness been termed autumnal fever. Many an urbanite has returned from his vacation stricken with this disease. Perhaps not all such cases are due to tainted wells. While such contributory factors as bad sanitation, wretched diet and lowered vitality are constantly with us, typhoid prevails mostly during fly-time.

Flies certainly disseminate cholera, and some cases of tetanus originate by this means.

The work of Reed, Gorgas and their confreres has made yellow fever practically as rare an entity on this planet as a lunar meteorite. They have proved beyond peradventure that the mosquito *stegomyia* is the medium of infection; that yellow fever can easily be prevented from becoming epidemic; and that the belief formerly held that the infection is conveyed from patient to patient by means of bedding, clothing and the like, is erroneous.

Unquestionably, again, the *anophiles* is responsible for malaria; nor will any one contract this disease who protects himself from the bites of this insect, which is a country and not a city bred variety of mosquito.

There are some who declare that mosquitoes spread leprosy; and it is quite possible that science will in the near future prove this hypothesis to be correct.

The bedbug has from time immemorial been obnoxious enough on his own account. It is now held—and no doubt correctly—that in smallpox epidemics, this disease is most rife in cheap lodging houses; "the houses in which bedbugs are found seem to furnish a steady supply of victims" (*Jour. A. M. A.*). Tubercle bacilli have been found in the blood of the bedbug. Metchinkoff believes that the bedbug forms an intermediate host or at least an agent for conveying intermittent fever, a disease very common in some

parts of Russia. Dr. Sirault, of our Department of Agriculture, finds that the bedbug (*cimex* or *clinocoris*) may live for many weeks without food. During the winter this insect becomes comatose and may live thus 100 days; some bedbugs have been known to exist eight months. And it is thus that the species is enabled to continue its existence from season to season, in lumber camps, summer residences, empty apartments and the like. Again, it is probable—and this is gruesome and unpleasant enough—the bedbug seems to have other host relations besides those with the *genus homo*. Evidently such relations have great potentiality for disease if these pests attack other creatures than man. Mice and rats, for instance, both living and dead, are attacked by bedbugs.

THE FOOD PROBLEM.

SLOWLY the searchlight revolves, and one after another of the sore spots in American business comes into view. Now it is the Chicago meat men who are having their methods exposed. For cold-blooded economy which stops at no consideration, the recent report of the President's two commissioners is probably unique. In the race for wealth the Chicago meat-packer has trained down to the last ounce. Old buildings, wretchedly paid help, the use of diseased and unfit animals, extreme haste, lack of cleanliness and care all help reduce the cost. Why should the meat-man care? He is counting only his receipts, and he has the safety valve nailed down on his financial craft and his boilers "chuck rosin and pine."

Of course with these examinations there is generally some exaggeration. Investigation is in the air, and investigators are playing to a very willing public. Again, butchering is a repulsive business at best, when done under most favorable circumstances. Place a man not familiar with the life in such surroundings, and naturally everything seems darker than it should. It is hard for a stranger to live the life of the workman and see his work as the worker sees it. He is apt to overrate its effect on mind and body.

It was the writer's privilege to investigate a large factory employing women which had been criticized in a recent magazine article. A young lady unaccustomed to such work, a stranger in a strange land, had lived in that city for a few weeks and worked in the factory. She painted it in sombre colors. She forgot that she was probably homesick and sensitive; that everything was naturally darkened; she had not been accustomed to such work, and it would have been hard for her in any surroundings. Trying to look at this situation, not from the standpoint of a New York girl who was doing unaccustomed work among strangers, but from the standpoint of the girls who actually do the work day by day, I found them happy and healthy. They liked their work, their employers and their surroundings. The workshops were clean and sweet, ventilation was good, the work was not hard, and the pay fair. They had nice dining-rooms, excellent gymnasiums, a lecture room, and ballroom. In fact, there was a strong desire to "get a job" there among the working people. So undoubtedly these pictures are overdrawn, perhaps unconsciously, but still overdrawn. A young literary man, full of nerves and tingling with feeling, drops down among butchers doing repulsive work and he sees their lives, not as they see it, but as it seems to him. Naturally the picture does not lose force as it is sketched by his hands and such a book as "The Jungle" follows.

Undoubtedly matters in Chicago need reforms, and we will have them. The packers will find it good business policy to supply clean goods prepared in a clean way. Good efficient work must in the end always be rewarded. The question of frozen meats is a broad one at the best. It is a problem how fit for food is meat that has been frozen and thawed several times, or has stayed frozen for a period. It unquestionably loses its sweetness and palatableness and is harder of digestion. In other words, it is less fit for human consumption. If, as a result of this investigation, local abattoirs would spring up, it would be a great help in the solution of the problem. Except as a saving of expense it should not be necessary to kill all cattle in Chicago; various stragetic points could be established.

Again comes round the old question, Why should we eat meat at all? We have had the recent picture of a nation going to war, performing marvelous feats of mind and body on rations composed largely of wheat and rice. In the march to Pekin, some years ago, participated in by American, Russian, English and Japanese soldiers, the grain-eating Jap ran right away from his white brothers in the endurance test; he traveled faster and he traveled in far better physical condition. The question arises, Was this due to his food? Undoubtedly as a nation we eat too much meat. Travel through the slums of a large city where the life is open and we can see the food of the people and we find Americans and the Irish spending their pittances for flesh, while the sturdy German and Italian buys salads, lettuce, green vegetables, etc. In fact, in many cities there has sprung up a race of Italian hucksters who cater to the wants of their people with surprising good vegetables and salads.

Let us remember this: the nation has to be educated that while good meats are essential from time to time, they should not constitute the basis of our diet; that our national tendency to kidney, liver and muscular troubles can be definitely traced now to over-indulgence in flesh food.

THE AUTOMOBILE FOR THE DOCTOR.

THE doctor is like the fireman in a large metropolitan fire department. He stands ready to respond on a moment's notice to any emergency in the community around him, from a railroad accident down to the minor sorrows of the nursery. Moreover, his regular patients are scattered over the country in various directions; so that in doing his business, he is dependent on some species of locomotion. The ideal form would be the "magic carpet" of the "Arabian Nights Entertainment," by which the fortunate possessor could waft himself away to distant points with loss of but few seconds.

There is no doubt that lacking such a magical source that the automobile is the ideal form of locomotion, if it is practical in its working. There can be no disputing this fact: the only uncertainty being the point that undoubtedly the automobile is in a stage of evolution yet.

This is the history of all inventions. Twenty years ago the hand camera came into use, but it was bulky, awkward, heavy, and expensive. Scarcely could a customer buy such an instrument before some new camera came on the market that made his apparatus a candidate for the junk shop. This continued for fifteen years, until gradually the improvements ceased, until now there has been no great improvement in such cameras for five years. They are efficient, light in weight, and far less expensive than the camera of ten or twenty years ago. This is a curious fact, that as a rule an improvement in an invention carries with it a cheapening in price. The article is generally not only actually better, but actually cheaper.

We are in the evolution stage of automobiles. There is a constant stream of changes being poured into the business every month. Some of these changes will stay; others will not. No one knows at the moment what the future holds.

The ideal power for automobiles is undoubtedly electricity, but as yet it has been a bitter disappointment. It can only be used for vehicles of limited area in travel with level ground to cover. Edison has been promising a battery that would supplant the use of gasoline, but at the present writing it has not been given to the world. It probably will come, if not from Edison, from some other electrician. When it does arrive in its perfected form, it will make old junk of all the present favorites in the automobile world. The passage of the free alcohol bill by Congress affords the trial of a new agent in propulsion, taking the place of gasoline. Its availability remains to be seen. Gasoline has many disadvantages, especially in its odor and its liability to explosion. The vapors of gasoline will travel some distance and meeting fire will carry the flame back to the parent source with remarkable quickness. Considering its dangerous character, it is really remarkable how few accidents have followed its universal use by all kinds of people. As yet the automobile is a rather complicated engine which has not the advantage of traveling on definite rails. As one writer says in the *Journal of the American Medical Association:* "If you don't like machinery and are afraid of getting grease on your hands in acquiring a thorough knowledge of every part of your car, and don't feel that you have the time to read up on the principles of the gasoline engine, don't be deluded into buying an automobile. Your success in using it will depend on the amount of knowledge you possess of its every part, for even the best constructed gasoline motor will at times give trouble. With a bit of trash clogging the nozzle of your carburator, or a loose commutator spring, or a short circuit in your wiring you will be just as helpless ten or twelve miles from home and the town mechanic as you would be if your car had dashed against a stone wall and converted itself into a scrap heap."

Again, the tire is a serious problem, both as to durability and as to cost. It makes the expense of keeping an automobile in the country more than that of a horse, unless we consider the wider extent of range of which the automobile is capable. Again, the manufacturers have hardly given the doctors' needs enough thought. The physician wants a car that is trustworthy the year round. It need not be too speedy, but it must be simple in parts and as practical in winter as in summer. It is well to use solid rubber tires for many reasons, although they decrease the speed and increase the liability of injury to the machinery. They are free from inflation, from puncture, from blowouts and pumping, and far less expensive. Again, the motor cycle is an excellent means of travel, the only criticism being its lack of dignity. It is efficient, very speedy, very cheap and very exhilerating. It can be operated at a cost of about four dollars a month.

With an automobile or a motor cycle, the doctor can cover five times the area that he can with a horse. As there are only twenty-four hours in the day, and the doctor must do his own work and at various points, it shows that the automobile has come to stay, and such a question as to its advisability for physicians' use will seem in ten years' time an absurdity. The ideal machine may then be on the market; it will be driven by electricity, have no complicated parts, its tires will be unpuncturable, and it will cost no more than a good horse and buggy.

That tuberculosis is sufficient ground for divorce was decided in a California court in favor of a wife who declared that on several occasions before the marriage she asked her prospective husband if he was perfectly sound and healthy, and was positively assured that he was free from disease.

BIBLIOGRAPHICAL

A Treatise on Surgery. In two volumes. By George R. Fowler, M.D., Examiner in Surgery, Board of Medical Examiners of the Regents of the University of the State of New York; Emeritus Professor of Surgery in the New York Polyclinic, etc. Two imperial octavos of 725 pages each, with 888 text illustrations and 4 colored plates, all original. Philadelphia and London: W. B. Saunders Company, 1906. Per set: Cloth, $15.00, net; half morocco, $17.00, net.

The second volume of the monumental work of this late lamented author, has been received, and it covers the clinical part of the field in an eminent manner. The text is clearly and interestingly described for practical purposes and the illustrations are profuse and to the point. No one can look through this work without being impressed that it has been prepared by a master-hand with a single aim.

In this work the study of inflammation from the surgical point of view is based on the tissue changes that follow the infliction of wounds. Contrary to the usual custom the subject of surgical bacteriology is introduced in connection with the etiology of inflammation, in which it is an important factor. The grouping of the topics differs somewhat from the arrangement usually employed, thus facilitating the study.

The section on Laboratory Aids is especially valuable owing to the increasing interest in hematology, urinology and kindred subjects.

The practical part of the work comprises a separate consideration of the injuries and diseases of each region. The anatomic method will appeal to the surgical clinician.

In presenting this new work the author has brought together the most recent and improved methods of surgical practice, and, with the aid of numerous cross-references to arrange these in a form readily available to the student and practitioner. Our readers will find the work worthy of their confidence. The physical part is in the highest art of the book maker.

The Practice of Gynecology by Eminent Authorities. Edited by J. Wesley Bovée, M.D., Professor of Gynecology in George Washington University, Washington, D. C. In one very handsome octavo volume, containing 838 pages, with 382 engravings and 60 full-page plates in colors and monochrome. Cloth, $6.00, net; leather, $7.00, net; half morocco, $8.00, net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1906.

This is the first of a series of three companion volumes dealing respectively with Gynecology, Obstetrics and Pediatrics, and jointly, covering this whole cognate domain in the light of the world's latest and best knowledge.

The present volume, under the able editorship of Professor Bovée, furnishes a practical treatise on the diseases of the generative organs of woman, including the urinary system and rectum.

Its scope is intentionally much broader than the usual treatise or text-book on Gynecology.

To secure the advantage of maximum practicality; to present the vast and important subject in a manner which will make it of the greatest interest and value, not only to the gynecologist and surgeon, but to the large body of general practitioners, has been the earnest endeavor of all concerned.

The contributors are eminent authorities, and the volume is richly illustrated. Each book is complete in itself and can be purchased separately. We especially commend the work to the general practitioner.

A Manual of Materia Medica, Therapeutics and Pharmacology. With Clinical Index. By A. L. Blackwood, M.D., Professor of Material Medica and Clinical Medicine in the Hahnemann Medical College, Chicago. 592 pages. Flexible leather, gilt edges, round corners, $3.50; postage, 6 cents. Philadelphia. Boericke & Tafel. 1906.

This book contains in condensed form the résumé of the materia medica of all remedies in common use, their pharmacy and therapeutics, together with a chapter on prescription writing, and the management of cases of poisoning. It will be found a handy little volume for ready reference.

Whooping Cough Cured with Pertussin. By John Henry Clarke, M.D., author of "A Dictionary of Practical Materia Medica," etc. London. James Epps & Co., 1906. 16mo, 76 pages. Price, $1.

This little book contains the report of seven cases of whooping-cough treated successfully with pertussin, with some lessons to be drawn from the cases.

The one-seventy-millionth part of an inch may now be measured by an apparatus invented by Dr. P. E. Shaw, of the University College, Nottingham, England. Five years of labor was expended in this task. The invention consists of a very fine micrometer screw and a series of six levers acting in conjunction with it, which are suspended by rubber bands from a specially made frame and inclosed in a box. The apparatus is placed in a vault and surrounded with every safeguard against friction and vibration; but even then it is impossible to carry out successful experiments while there is traffic in the streets. Every factory where motive power is employed must be closed, even if it is some distance away. Even a draught is found fatal to successful measurement. Dust must be kept from the vault. The buzzing of a fly has suspended experiments until the insect has been disposed of. There are many uses for this instrument, which undoubtedly surpasses every other form of measurement in delicacy and accuracy. It is especially serviceable in measuring engineering gauges; it will act as a most delicate coherer for wireless telegraphy, and will promote the study of nature and possibly of molecular movement. The general principle applied is electric touch. If two clean polished surfaces come in contact the current can at once be made to pass through them and excite a telephone or other sensitive recorder. It has heretofore been impossible to measure the sparking gap of an electric current of less than 38 volts; Dr. Shaw's apparatus can measure one of half a volt. "If physicists desire to understand and explain nature's happenings it is imperative that there should be exact measurements of very small lengths and of extremely minute particles. Seeing that nature deals in such small quantities, it is useless to attempt to unravel her secrets without the finest instruments," states the *Evening Post.*

CORRESPONDENCE

THE DOUBLE A, B, C OF APPENDICITIS DIAGNOSIS.

To the Editor of THE MEDICAL TIMES:

Dr. McCrory's most excellent contribution to the subject of appendicitis, published in a recent number of the MEDICAL TIMES, leaves out one of the constant diagnostic features which were included in the "double A, B, C formula" that I arranged for my class at the college some years ago. This omission is so common, and the point is so definite and characteristic, that it might stand first in diagnostic importance. It is the double B. Board Belly. From the earliest moment of infection of the appendix, the abdominal muscles tighten in protective spasm, to make Nature's splint.

Here is the double A, B, C of appendicitis diagnosis:

Acuteness of Attack.
Board Belly.
Colic and Constipation.

The student quickly enough finds the exceptions after he has fixed the A, B, C in mind.

ROBERT T. MORRIS, M.D.

616 Madison Ave., New York, May 24, 1906.

The limitations of electro-therapy are set forth by Rhein (*Monthly Cyclopedia of Practical Medicine,* Dec. 19, '05). In many functional diseases its use is decidedly advantageous, partly because of the powerful mental impression and partly because it is certainly capable of altering the functional activity of nerves and muscles. On the other hand, many physicians employ it when it can do no good, and sometimes when it does positive harm. The agency used to be considered almost a panacea for all diseases; Rhein demonstrates the fallacy of this belief, but on the other hand indicates the ways in which it is valuable. Besides the X-rays, the faradic, galvanic, static, the sinusoidal and high frequency currents are useful; the difference in the effects of these currents is largely one of degree, with the exception of the galvanic current. Galvanism, when applied to the skin, causes local congestion, stimulates muscular contraction, increases glandular activity, exercises an electrotonic effect, produces a chemical and an electrolytic effect, influences osmosis and is valuable as a means of suggestion. The faradic current does little more than act as an irritant, causing an involuntary contraction of healthy muscles and stimulating the sensory nerves. The sinusoidal current has the same physiological qualities as the faradic, but produces little or no pain. The static current, when applied to a motor point, causes muscular contractions, acts as a counter-irritant, and produces a powerful psychic effect. Unquestionably the latter forms a large part of the cure in cases where electricity is helpful.

Potassium Permanganate as a hemostatic is advised by Schädel (*Deut. Med. Woch.,* Jan. 25, '06), It should be used as a paste by mixing it with vaseline in the proportion of 4 per cent. The bleeding parts should first be thoroughly dried. The application is only slightly painful; it is appropriate in epistaxis and in bleeding after the removal of warts and condylomata. The preparation may be preserved in an air-tight dish, as exposure to the air is apt to deteriorate it.

RETROSPECTIVE THERAPEUTICS

Pulmonary Œdema or Acute Respiratory, Congestive Catarrh.—In a number of cases giving the ordinary history and symptoms and physical signs of pulmonary œdema, and having the same underlying basis of enfeebled circulation through the lungs, we have noted the expectoration, not of a watery or frothy, but thin transudate, but of a quite dense, mucus material, raised with difficulty, and sometimes blood-tinged. In a recent case, under active stimulation—by ammonium chloride, about 6 grams in ten hours and 1.5 c. c. of fluid extract of digitalis in the same time—we have seen the expectoration cease and the physical signs—bubbling and finer rales, without evidence of true consolidation—abate, evidently on account of the reabsorbtion of the exudate, since expectoration ceased much earlier than the disappearance of the auscultatory signs.

While the nature of the fluid in the respiratory passages has not entirely escaped attention, we feel convinced that too little attention has been given to the distinction mentioned. We are inclined to believe that the matter has an intensely practical as well as scientific interest. The escape of a watery fluid into the air passages in cases of engorgement of the lungs, is in line with acute œdema of the tissues generally and is always an alarming, though not necessarily fatal occurrence. The danger is twofold. First there is direct interference with respiratory interchange of gases and this interference may be so gross as to be in analogy with drowning. Indeed it is more strictly a mechanical interference with respiration than ordinary drowning since, in the latter, the water does not typically—according to some authorities—ever enter the lungs, but asphyxia is due to spasm of the glottis. Secondly, pulmonary œdema is an alarming condition, apart from the immediate threat of asphyxia, because it indicates a depression of circulation or of the more recondite resistance of the body. For example, we have noted it with thymic enlargement, causing sudden death in a child apparently in good general health.

Thus, pulmonary œdema is peculiarly apt to be a terminal state and is often present when it does not occur to the physician to make the formal diagnosis, although he recognizes that the patient is dying.

The condition to which we have especially called attention may also be regarded as an exaggerated initial stage of broncho-pneumonia or even of lobar pneumonia not definitely infectious. There is the same predisposition by senile cardio-vascular changes, often the direct history of alcoholism, the exciting cause of an exposure to cold, and the mucous secretion, particularly if attended with diapedesis of red corpuscles, is precisely what is supposed to occur in the preliminary stage of a pneumonia excepting that the very magnitude of the exudation produces positive physical signs and fills the larger branches of the respiratory tree.

The question seems pertinent whether such a case as we have briefly described, would not eventuate in a broncho-pneumonia if, on the one hand, the vital resistance was great enough to prevent immediate death and if, on the other, the circulation was not promptly balanced and resorption was not secured?

Many abstruse problems in physiology and, there-

fore, in therapeutics, present themselves. How far do such conditions, of various types, depend upon the pulmonary circulation proper, and how far upon the systemic circulation throughout the bronchial branches from the aorta and back into the right ventricle? Experiments have shown that the pulmonary circulation itself cannot be greatly modified by differences in calibre of arterioles, as can the systemic circulation.

Is the indication to force more arterial blood through the lungs, or to draw the blood elsewhere? Shall we bleed the patient and reduce the amount of blood going to the right auricle, or shall we relax the arterioles generally as by amyl nitrite, or shall we produce similar effects by loose bandages of the limbs? Or shall we use extremely hot rectal enemata to drive the blood out of the portal area? Will wet or a dry cupping or poulticing or some form of rubefacient application to the chest do good or harm? Is the orthopnœa so frequently seen distinctly conservative, or shall we try to diminish the work of the heart and favor expectoration by gravity, by forcing the patient into a supine posture? In other words, how much of the additional discomfort due to the recumbent posture is subjective and how far does it really tend to overcome mechanical obstacles to the circulation? If the expectoration is tenacious, shall we soften it by steam inhalations? Shall we use the so-considered relaxing and nauseating expectorants or the opposite class? If, as is often the case, we cannot command an abundance of pure, warm air, shall we open the windows and increase the oxygen at the sacrifice of warmth—the patient usually breathing through the mouth—or is it better to avoid the inhalation of cold air when the air of the room is plainly vitiated?

We doubt whether all of these cases of dyspnœa, with fluid in the respiratory tree in conspicuous amounts, can be brought into the same category. Time is not afforded for careful examination of urine, blood pressure, etc., even physical examinations must often be hasty, while the demand of the patient for immediate relief is imperative. There is not even time for a leisurely weighing of theoretic pros and cons. In view of the considerable immediate mortality of such cases, the forcing of the patient into a supine position, against his subjective and, perhaps, correct, interpretation of the indications, may subject us to serious criticism. So, too, if we use depressant measures and death supervenes, we may at least be subject to self censure. Unfortunately, we must confess ourselves unable to solve the various problems involved, in advance, or even, in all cases, to reach a practically satisfactory solution in the individual case. Yet it is worth while to bear in mind the various conditions that may closely simulate one another and the individual differences in pathology that may be present.

Distant Signs of Intrathoracic Disease.—Œdema of the ankles or of the areolar tissues generally is a well-known sign, not only of essential renal disease and blood poverty, but of cardiac weakness and lesion. Cyanosis is an even more conspicuous general sign of cardiac weakness, often associated with true respiratory interference. The hectic of phthisis is known even to the laity and, as is usual in such cases, its importance is exaggerated. There is a facies in which cyanosis, œdema, and the muscular action of dyspnœa or, the expression due to such action at other times, make a quite distinct picture of cardiac lesion. Strictly respiratory dyspnœa is apt to present a slightly different facies, and yet the two are often confused or a double lesion renders a snap diagnosis impossible or fallacious.

Tracheal tugging is a well-known sign of aneurysm, though by no means absolute.

A. Gröber (Deutsche Arch. für Klin. Med., Vol. 82, No. 3 and 4, 1905) has made a study of certain signs of intrathoracic lesions, suggested by the well-known inequality of the pupils in mediastinal disease. But he directly contradicts the former teaching as to cause and location of the phenomena. As is well known, stimulation of the sympathetic dilates the pupil while stimulation of the motor oculi causes contraction. Paralysis of either produces a respective oposite effect, by withdrawing resistance to the action of the remaining innervation. Supposing the lesion to be in the mediastinum—or even in the apex of the lung acording to Gröber—so that the oculomotor nerve will be in a normal state, relative dilatation of one pupil may indicate stimulation of the sympathetic of the same side or paralysis (or paresis) on the opposite side. In the case of mediastinal disease, the limited area involved makes it practically immaterial which is the true explanation, but if we extend our research to the thorax generally, the physiologic interpretation must be exact or directly opposite conclusions will be drawn. While Eichhorst has upheld the theory of paralysis of the sympathetic with resluting pupillary contraction on the side of the lesion, Gröber points out the improbability of a paralysis unless there has been strangulation of a nerve by contracting scar tissue or marked pressure by a tumor. Inflammatory, traction or pressure irritation, of moderate degree, is much more likely to stimulate, in accordance with well-known general principles applying to all nervous structures.

Gröber's original test, a modification of previously known physiologic and pathologic pupillary reactions, consists in filling the lungs by a deep inspiration and then attempting to expire with the glottis—or mouth and nostrils—closed. Normally, the pupils dilate slightly with inspiration and contract slightly with expiration, depending upon alterations in intrathoracic pressure. In a normal individual, these reflexes are simultaneous and identical in both eyes. Whether unilaterally or bilaterally, a dilation when there should be contraction, indicates a homonymous intrathoracic lesion. A negative result obviously does not exclude a lesion, for one might exist without involving the sympathetic.

A related phenomenon exists in the case of the jugular and tributary veins, which normally become equally distended during forced, resisted expiration. In pulmonary disease this distension may be permanent or aparent only during the test. In either case, the application of the test allows us to diagnose a homonymous lesion. For instance, if the right vein is permanently more distended than the left, we may conclude that the right lung is affected. But if, by applying the test, a disproportionate distension of the left vein ocurs, we may conclude that that lung is

also affected. As in the case of the pupillary reaction a negative result does not necessarily exclude a lesion. We would also suggest that some allowance should be made for extrinsic factors, of an anatomic nature or due to local circulatory phenomena, especially when permanent inequalities exist.

Hay-fever will soon require the physician's attention, especially among patients who cannot leave their homes. This distressing and oftentimes—generally, we must admit—baffling malady may be successfully dealt with if treatment is instituted weeks before the invasion. We here submit suggestions and modes of treatment, some of which when properly adapted to individual peculiarities, may be successful. In no other disease, indeed, is it so important to consider the individual and his indiosyncracies. In all cases it is absolutely essential to determine the etiological factor. Wolner (*Northwestern Lancet,* May 1, '06) has relieved within an hour a patient of a very bad attack of hay fever, when all other means had failed, by applying ice water compresses to the face, renewing them immediately they became warm. This was kept up constantly for about three hours and off and on during six hours. There was no recurrent attack that season. A year later, the malady reasserted itself, when the same treatment was again effective for that whole season. No doubt the effect here was upon the vasomotor system. Knight presents some valuable notes (*Internat. Clinics.,* Vol. III., 15th series) concerning both hay-fever and asthma. The upper air passages must be thoroughly examined; we may thus demonstrate the origin of the disease by mitigating or abolishing bronchial symptoms by means of a cocain application. When no effect is observed, it is safe to assume that the upper air tract is not responsible. Colin Campbell recommends the intratracheal injection (in appropriate cases, of course) of menthol (30 grains) and glycerine (2 ounces); this enormous dose he administers at a single sitting. Immediate relief follows the first application. Several more may be needed to give permanent immunity. Gleitsman also believes that "many, but not all, cases of asthma," may be relieved by this method. Hubbard has secured prompt relief in his own case by injecting into his own trachea a drain of medicated solution. Atropin internally will counteract the nervous excitation which often supervenes; Kremer claims good results from the hypodermatic use of this drug (1-120 grain, repeated if necessary in twenty-four hours). McDonald claims forty per cent. of cures by cauterizing the septum in cases where there are polypi, septal and turbinal hypertrophies, septal spurs, and even by searing the Schneiderian membrane in cases where marked abnormalities are absent; as it is appropriate to cauterize wherever spurs and the like exist, this form of treatment should not be neglected. Dunbar has prepared an antitoxin which is said to allay, arrest, or modify the very annoying and exasperating symptoms. The serum must be renewed at intervals of a few hours, since the effects are temporary. This serum may also be given in powdered form. The fluid serum easily becomes contaminated and is then useless or worse; its hypodermic use has been abandoned because of the violent local reactions it excites. Mohr, who is himself a sufferer, has devised a nostril filter whereby the sensitive membranes are protected against the invasion of irritating particles. Fink has cured 95 per cent. of his cases in a few days by daily insufflations of aristol into the maxillary antrum; he believes that irritation of the trigeminus is the cause of the disease. Cocaine should be reserved *only* for diagnostic and operative purposes. Adrenalin is non-toxic, is followed by little or no reaction, and its continued use involves no danger of a drug habit; it may be safely entrusted to the patient, who may, however, not be relieved by it. The 1-1000 solution may be diluted with normal salt solution. Clark's solution (glycerin of carbolic acid, B. P., 1 ounce; muriat. of quinin, 1 drachm; perchloride of mercury, 1-4 grain) may be painted *over hyperesthetic* nasal areas. It must be repeated on the second and the fourth days; but three applications are required. Cocaine must be used beforehand; even then the application is painful. Thorowgood uses a spray of quinin 1 grain, water 1 ounce, to be used as a nasal douche or with syringe. Fulton follows this with an ointment of quinin 1-2 drachm to 1 ounce vaseline, repeated every three or four hours. The severity of the attacks depend largely upon atmospheric conditions. The personal equation must not be overlooked. Many of these patients are very impressionable and amenable to suggestive therapeutics.

Tetanus must be anticipated about the Glorious Fourth. It is a pity that the patriotism of our youth cannot be taken for granted, without having to be dissipated by means of dangerous explosives. In our issue of July a year ago we submitted some observations which we would reinforce by the following: Local treatment should be instituted at once on the open wound plan, with strong antiseptic solutions, preferably of hydrogen peroxide. Deep wounds, such as those of a nail or the tines of a hay-fork, or where the paper wad of a blank cartridge has been carried into the tissues, must be cleansed, made aseptic, pitilessly incised and enlarged if necessary, and packed from the bottom with gauze. The whole wound must be disclosed. In one case a physician was satisfied to dress a blank cartridge wound superficially and let it go at that; ten days later, the patient, a boy of eleven, developed tetanus. A surgeon was consulted, who, under chloroform, incised the wound (in the palm) and disclosed a gelatinous mass beneath the surface, which was curetted away. Under tetanus antitoxin this boy got well. The patient is to be kept in a dark room, absolutely quiet and with but one attendant; visitors must be absolutely interdicted. If the lockjaw will not permit food to be taken by the mouth, feeding may be done by the catheter introduced through the nostril or rectal injections may have to be resorted to. Chloroform or morphine must control the spasms. A few whiffs of chloroform may be given to mitigate the rigidity of the masseters in order that food may be taken. For other drugs much cannot be claimed. Eserine has been used internally or by hypodermic (1-50 grain every two hours), as also tincture lobelia, an initial dose of ten drops, increasing the dose by one drop every two hours. These drugs are supposed to mitigate the muscular spasms. The bromides, chloral, belladonna, calabar bean, hasheesh, curara and other drugs, have been recommended. No one is very enthusiastic about them. They may have to be given per rectum. Lumbar punctures have been tried, but hardly with success. The measure from which most is to be hoped is the injection of tetanus antitoxin. Un-

fortunately the disease has in many cases made so much headway (the incubation is about a fortnight and the initial injury is often unnoticed) that by the time the symptoms appear the bacillus has elaborated so much toxin that the antitoxin is ineffective. The appearance of pronounced symptoms generally indicates, sad to say, the beginning of the end. The serum must be injected early, here as in other infections. Still some good results have followed even after late injections; and, of course, they should be employed faithfully, as should any means, however desperate. An ounce of the serum should be injected for the first dose, and half an ounce every five or ten hours thereafter during the progress of the disease, until the symptoms are controlled. In New York City the Health Department provides serum for such cases with very specific directions; and this example is followed now in other of our large cities, supplies of antitoxin being distributed before the Fourth to the various hospitals and dispensaries, for use in emergencies. Of course, the serum is indicated imperatively as a preventive agency in cases of suspicious wound infections, especially such as are caused by *toy pistols and cannon and giant firecrackers;* practically no cases have resulted from roman candles, display pieces, torpedoes, paper caps or small firecrackers. In order to establish the diagnosis during the incubation cultures should be taken from the pus in the wound; moreover, as the tetanus toxin is contained in the urine, a very important test is the injection of urine from a suspected case into a susceptible animal, such as the white mouse.

The current theories of Uremia are criticized by Croftan (*Jour. A. M. A.,* Jan. 6, '06), who shows that neither anuria nor the variations of excrementitious nitrogen output suffice to explain this phenomenon. The two most important abnormal conditions which may be deemed characteristic are: A relative increase of the ammonia salts, both of the blood and urine, as compared with normal average values and with the circulating and excrementitious area; and a relative decrease of the urea, both of blood and urine, as compared with normal average values and with the total nitrogen of the circulating and excrementitious waste products. There may also be very toxic albumenoids or alkaloids in the blood or urine that might have an enormous effect without changing to any degree the amount or relative proportions of the nitrogen content. The most delicate tests for inorganic salts give little evidence that uremia is due to salt retention. There must be some poisons acting in the production of uremia. The decreased urea secretion is probably due rather to non-conformation than to retention. It is not increased in the blood as it should be if it were not merely eliminated, and the corresponding increase of ammonia is normally converted into urea. Disturbances of the liver and kidney are often concomitant; they would be found to be still more so if the liver were examined as thoroughly in every case of Bright's coming to autopsy, and if mild functional hepatic disorders were as easily recognizable as like renal disorders. Even if the kidneys primarily eliminate toxic matters some of the most important of these must pass through the liver before renal elimination. Even if the kidneys are primarily diseased more work is thrown upon the liver, not only in its disintoxicating function, but also in making up for the waste caused by a leaky kidney. The liver consequently becomes fatigued, its function to disintegrate albumines is impaired, and less urea and more incompletely disassimilated intermediary products of albuminous metabolism are thrown into the circulation. Though this may thus follow or accompany renal disease, it is still due more to hepatic than to renal insufficiency. Hence the importance of considering the liver in cases of uremia. Oftentimes, indeed, instead of stimulating the kidneys, uremia might be prevented by atending to those organs which threaten to fail. There should be rest for the liver—even starvation for a few days; all irritating substances should certainly be eliminated from the diet. Intestinal putrefaction should be reduced to a minimum. This treatment should be followed by mild stimulation, the carefully guarded use of salicylates, of bile acids, possibly of calomel and such dietetic and physical means as are available, all under careful supervision. Blood-letting is indicated for acute uremic attacks. A normal salt hypodermoclysis may replace the lost fluid; salicylate of soda may be added to the normal salt solution, or sodium citrate or phosphate.

Infection by air-born germs is not completely avoided, declares T. Hewlett (*Jour. Pur. Med.*, Dec., '05) by means of wet or dry sponges tied over mouth or nose, or by specially designed respiratory masks. Von Esmarck, of Gottingen, has proven the inefficiency of many of such forms of apparatus. By means of a spray the air of a given room was infected with a quantity of *B. prodigiosus.* The operator, having adjusted a mask, entered and remained in the room for five minutes, then left and took cultures from each nostril, the mouth, tongue and saliva. In every experiment with sponges or masks bacilli were found in the nose and mouth. But by putting cotton wool plugs into each nostril and rubbing a little vaseline around the rim of the nostrils, it was possible to keep the nose perfectly free from *B. prodigiousus.*

The abrupt onset of typhoid fever is considered by Manges (*Jour. A. M. A.,* Dec. 30, '05), who distinguishes two groups of such cases—those which really are abrupt, and those which seem to be abrupt and yet are actually not so. Among the latter are the "walking typhoids," in which the onset of the disease has been insidious and which receive medical aid only after the appearance of some such catastrophe as perforation or hemorrhage. Abrupt onset may be ushered in with chills, severe pain in the abdomen, head or other parts of the body, or violent delirium; or such cases may simulate appendicitis, nephritis, pneumonia, pleurisy, grippe or diphtheria with throat lesions. Such sudden onset must be due to the latent development of the typhoid bacilli in the organism without any marked clinical features until the disease has developed; or to the rapid development of the bacilli in the body.

Deep injections of alcohol in neuralgia are counselled by Ostwalt (*Presse Medic*), who had made 250 such injections in cases of tic douloureux without the slightest mishap or unpleasant after effects. The pain was arrested at once, and was cured in at least 90 per cent. of the cases. In about one-third of the patients there was recurrence after several months, but one or two more injections definitely dissipated

the pain. Oswalt injects 1 to 1.5 c. c. of 80 per cent. alcohol, to which .01 gram of cocaine or stovaine has been added, making the injection along the trunk of each of the branches affected, at the point of emergence from the bone. These injections are effective also in sciaticas and other neuralgias. Treatment of these affections is so often ineffective that Ostwalt's plan should certainly be tried.

Landry's paralysis is held by R. McGregor (*Am. Med.*, Dec. 9, '05) to be due to a toxæmia especially involving the anterior spinal horns; in very virulent intoxication the peripheral nerves may also be implicated in a secondary way and a multiple neurotic condition coexist. Such cases as these are very difficult of diagnosis. The very high mortality of Landry's paralysis contrasts, however, with multiple neuritis and anterior poliomyelitis. In one of McGregor's cases the attack seemed to follow vaccination; it was preceded by chilly sensations, fever, sweatings and vertigo, and the rapidly ascending paralysis within a week from its first appearance had involved all four extremities, the muscles of speech and deglutition, and the ocular muscles. There was also cardiac irregularity and dyspnœa, but no pain or tenderness along the course of the nerves nor fever after the onset. The patient slept and ate well. The bulbar symptoms began to improve after two months, but recovery was not complete until after two years, nor even then had he regained his former weight by thirty pounds. The glycerophosphate of iron and strychnine in small doses were the drugs administered.

Some ophthalmological phases of accessory sinus disease are set forth by Posey (*Jour. Eye, Ear and Throat Dis.*), who finds often severe disturbance in this relation with prominent symptoms; unless those of a sinusitis are well marked, its presence may be unsuspected. Even in acute sinus inflammation there is often no discharge, either because the pus is pent up, or because the disease is simply congestive.

The Opsonic Index is well defined by Meakin (*St. Bart's. Hosp. Jour.*, Jan., '06). The opsonic effect is the condition produced upon the bacteria (*not* upon the phagocytes) by "opsonin," whereby the bacteria are rendered a ready prey to the latter. Phagocytosis really depends upon the presence of this opsonin in the body, according to the investigations of Wright and Douglas. In some conditions the opsonic power of the blood can be raised by an innoculation with bacterial vaccine, which consists generally of a sterilized suspension of bacteria in water; but as a rule this risen opsonic power, or *positive phase,* is preceded by a *negative phase* of diminished opsonic power. The latter is usually very transient. No second dose of vaccine is to be given until the positive phase has supervened; else one negative phase would be superimposed upon another, with baneful results. In an acute bacterial invasion, such as typhoid or pneumonia, the patient is probably absorbing poison continually, and so inoculating himself; so that injections of bacterial vaccine are not indicated during such an attack. Wright and Douglas estimate the opsonic power of the blood serum by mixing together equal quantities of: blood-corpuscles freed from serum by washing first in a one per cent. solution of soda citrate in normal saline and then in normal saline; an emulsion of bacteria in salt solution; and the serum to be examined. This mixture is incubated at the body temperature for twenty minutes, and a film is then prepared and stained in the same way. By counting the number of bacteria ingested by each polynuclar leucocyte an average is obtained. This average is compared with that obtained in an exactly similar experiment in which the serum of a healthy man is substituted for the patient's serum. The average number of bacteria ingested under the stimulus of the healthy man's serum is taken as ninety, and the patient's opsonic power is expressed in terms of this. Thus, if the average number of bacteria ingested with the healthy man's serum be 5, and with the patient's serum be 4, the latter's opsonic value will be 0.8; and this is described as his "opsonic index." This process has chiefly been used in chronic tuberculosis of the lung, larynx, bladder, etc.; the chief objection to it is the difficulty of the test.

Psoriasis is related to rheumatism, declares Burnet (*Treatment*, April, '06). In many cases psoriasis cannot be traced to its source; oftentimes, however, a history of acquired or inherited constitutional disease can be made out, of which the skin lesion is but a single manifestation. The psoriasis of childhood practically always indicates a rheumatic condition. One or both parents of the sufferer are found to be rheumatic; brothers or sisters may have had "growing pains," chorea, attacks of acute sore throat, purpuric rashes, curious erythematous eruptions, or pleuritic affections—symptoms really pathognomonic of rheumatism. Treatment by means of the empiric use of arsenic and ointments has no sound scientific basis. Until we know the cause of any disease we cannot treat it rationally and scientifically. But if the psoriasis be attributed to rheumatism the line of treatment is clear. Anti-rheumatic remedies in full dosage over a prolonged period are indicated. The diet should consist largely of milk, fish, eggs and fruit. The heart should from time to time be examined, especially in children.

Nesteostomy.—Lempp (Arch. für Klin. Chir., Vol. 76, No. 1) treats of the results of nesteostomy (jejunostomy) from an experience of 65 cases in von Eiselberg's clinic. Most of the cases were subjected to the operator's modifications of Witzel's method for gastrostomy. Only four proved troublesome or intractably leaky. In case leakage occurred around the catheter, the latter was withdrawn until the fistula closed a little, when it was reinserted.

In 44 cases of gastric cancer, the experience obtained was as follows: Some form of surgical intervention is indicated even if radical operation is plainly impossible. Gastro-enterostomy is to be preferred if the pylorus alone is involved, nesteostomy if the cardia alone or both orifices are involved. Nesteostomy is also to be preferred if the patient is too weak to stand the longer operation of gastro-enterostomy, if the latter is technically imposible or if an internal gastric fistula exists. General peritoneal extension of the cancer contraindicates nesteostomy and the operation is especially indicated when rectal feeding lessens the suffering, or when vomiting is uncontrollable.

Eighteen cases of gastric ulcer gave rather unfavorable results: 6 were cured, 8 died within 30 days, the other 4 did better than could have been expected

after gastro-enterostomy and the danger of duodenal ulcer is avoided. The author considers excision of the ulcer ideal and the operation of nesteostomy is to be selected in accordance with the principles given for cancer, also for hour-glass stomach if either cavity is inaccessible and for penetrating callous ulcer.

Five cases of gastric corrosion yielded negative results, although two lived long enough to show the value of the operation in some cases.

Leprosy as it exists in the Philippines is described by H. B. Wilkinson (*Jour. A. M. A.*, Feb. 3, '06). The exact manner of its propagation is obscure. It is rarely, if ever, transmitted from parent to offspring, and is with difficulty transferred from one person directly to another. There seems, however, to be a common source of infection to which members of the same family may be subjected, especially during early childhood. Skin examinations for the bacillus may be negative in the atrophic variety, though the organism may be found in the nerves supplying the affected parts. X-ray treatment was tried in thirteen cases. The applications were continued for ten minutes, at a distance of from seven to ten inches, upon the most affected portion of the body. The distance and time of exposure were occasionally varied, the intention being to approach as nearly as possible the point of burning, without causing a burn. When burns occurred they healed rapidly upon suspension of the treatment. Wilkinson had three cases; one of these died, but the autopsy and the microscope revealed no evidence of leprosy. Seven patients are improved, there being marked decrease of leprotic deposit and the advance of the disease being apparently checked. Three remain unimproved. The X-ray probably cures by killing the bacilli, the bodies of which are absorbed and thereby produce an immunity against the living organism, the process being analogous to the plague, in which immunity is produced by injecting killed cultures of the plague germ. Patients with localized massive leprous deposits are most rapidly improved; in cases with diffuse general involvement of slight degree, or of atrophic character, with only a few scattered germs, Wilkinson has not succeeded well.

Headaches are due to many causes; but chief among these is eye-strain. (*Virg. Med. Semi-Mo.*, Feb. 23, '06). On the other hand, all eye defects do not produce headaches, as in a patient with 0.50 D. of astigmatism in one eye and 0.75 D of astigmatism in the other, at oblique axes, accompanied with two degrees of night hyperphoria. In another similar case the headache and inability for close work would be marked. No internal medication will cure a headache due to structural ocular defect. On the other hand, spectacles will not, of course, cure a headache due to a specific gumma, gastric hyperacidity, constipation, pelvic or febrile diseases. Digestive disturbances are often caused by eye strain; let the sceptic use a pair of badly fitting cylinders and await the result. Eye-strain induces also insomnia, neurasthenia, irritability, migraine, general depression and light forms of chorea. The neurosis are becoming recognized as symptoms of eye-strain. Case: Patient, aged 30, had been treated by general practitioner during six months for headaches, without relief; she had suffered in this manner as long as she could remember. For ten years past they had been worse. She had spent several months in a sanitarium for nervousness. She had been blistered from the cervical vertebræ to the lumbar region for a "spinal irritation." Examination of refraction revealed 1 D of hypermetropia with 1.50 D of astigmatism in each eye; appropriate glasses have made her absolutely free of headaches and nervousness.

Appendicitis and gynecological disease are well differentiated by Bollenhagen (*Brit. Gynec. Jour.*, Feb., '06). There are several factors which may lead to error: There is the anatomical position of the appendix, which may be attached not only to other neighboring organs, but even to the uterine adnexa. Moreover, owing to the uncertain position of the appendix, the symptoms—even the seemingly characteristic pain—cannot be looked upon as definitive, since pains arising in the genital organs might be referred to the same place. Differentiation is possible, if it can be made at all, only by means of bimanual palpation. A wandering kidney may be at fault. Gynecological disorders which may be mistaken for appendicitis are: Torsion of the pedicle of an ovarian tumor, a condition in which adhesions are very frequent, especially in small tumors of the right ovary; interrupted extra-uterine pregnancy; and, most frequently, inflammations of the true adnexa, in which one has to depend entirely upon the case-history, since a diagnosis is hardly possible during the acute stage. Even in recurrent cases, in which one may have to do with large adnexal tumors, the diagnosis may be uncertain, since the pyosalpinx may be high up in the abdomen. In chronic cases the difficulty is not so great. Palpable lesions may be found in the right adnexa, while the pains will be referred to a supposed inflammation of the cæcum and the like. Sometimes by combined examination one may discover an exudate or other lesion in Douglas' pouch which may be dealt with per vaginam.

In puerperal convulsions Duke recommends that both venesection and transfusion of normal salt solution be carried on simultaneously, more especially in hospital practice. The bleeding removes some of the poisoned blood; the saline fluid dilutes and supplies the proper volume to keep up cardiac action and is a diuretic in addition. In cases where fits follow each other rapidly morphine may be injected in order to obtain an interval between convulsions, in which to do the venesection and the transfusion. This sad condition of eclampsia can often be prevented by keeping all pregnant women under observation for the three months preceding labor. The bowls, skin and kidneys should receive constant attention during this preliminary period.

Prostatic hypertrophy and diabetes co-exist more frequently than is supposed, states Posner (*Berl. Klin. Woch.*, Nov. 20, '05.) All cases of enlarged prostate should be examined for glycosuria; and *vice versâ*. There is a special connection between arterio-sclerosis and diabetes, and in cases of prostatic hypertrophy there is usually arterio-sclerosis. If a diabetic complains of vesical troubles, these are usually attributed to the general disease. Conversely, an excessive secretion of urine or a high specific gravity in a sufferer from prostatic enlargement is regarded as due to the local condition. Posner reports a death from diabetic coma immediately after a prostatectomy.

MISCELLANY

The first Japanese woman who studied medicine in Germany is Miss Lada Urata, who has been made professor, *honoris causa,* by her own government.

The Medical faculty of the Paris University have planned an international technological encyclopædia, to be issued in ten languages, including "Esperanto," the new world language, which is supposed to have supplanted volapuk.

Oral sepsis is a matter frequently lost sight of, especially with relation to chronic gastro-intestinal disease; the point of entry in many cases of infection is to be found in putrescent dental conditions and in unhealthy tonsils.

The ghost of Hamlet's father, observes an exchange, made some remarks on the battlements of Elsinore which seem to have indicated that he had a visiting acquaintance with certain underground imitations of a Chicago packing house.

The Paris Medical Journal has been started under the joint editorship of Drs. A. A. Marden and E. L. Gross. The purpose of this excellent journal is to provide English-speaking physicians with a monthly résumé of the work of French physicians and surgeons.

Cheap thermometers are not a good investment, it would seem from the experience of an exchange. In a shop which was visited there were temperatures recorded sufficient to satisfy all tastes. Six of these instruments registered respectively 71, 68, 83, 79, 81 and 76 degrees.

The cultivation of bananas is being developed by the Mexican government. This excellent and very nutritious fruit—which in some parts of Africa is a suitable food in lieu of milk for little children—is to be made into a flour; and this product is to be shipped to the United States. No doubt there will be a good market for it.

A lubricant for urethral instruments is recommended by Strauss: 1.5 parts of tragacanth are rubbed up with 50 parts of water, and 50 parts of glycerine are added. The mixture is then sterilized by heat and 1-5 part of oxycyanide of mercury is added. The mixture is thick, non-irritant, does not attack the instruments, and makes them very slippery.

The Jungle, Mr. Upton Sinclair's novel, in which the Chicago beef industry has been stigmatized to the extent that it has caused legislation to be making in Washington, has occasioned this striking comment in the *Evening Post*: It is not an uncommon thing to dramatize a novel, but this is possibly the first instance on record where one has been enacted into a law. Virtually, that is what has been done in this case.

Milk licenses can be revoked on sufficient grounds by the Health Department of New York City, so the Appellate Division of the Supreme Court has decided. A certain milk company tested this question by suing the city to recover $30,000 damages for destroying its business by revoking its licenses. The Board contended that the company's dairies were found to be in a filthy condition, and its milk adulterated and unwholesome. The Court unanimously sustained its action.

A problem in heredity is suggested by the experience of three excellent but not well informed American citizens who asked for places at the recent John Paul Jones memorial services at Annapolis, on the ground of being his descendants. John Paul, however, lived and died a bachelor. Our secretary of the navy, with characteristic tact sent the tickets, but explained to the applicants that they were probably descended from one of the sisters of the great sailor.

Puerperal infection, states McDonald (*Am. Med.,* Feb. 17, '06) may be toxæmic, septicæmic or pyæmic. While the streptococcus is the most common organism, other types of infection may cause severe symptoms. The term puerperal infection should be meant to include lesions elsewhere than in the uterus, the nature and location of which should be recognized before any operative measures are undertaken. McDonald rightly condemns currettement in these cases.

The American Society of Tropical Medicine, states the *New York Medical Journal,* has just completed the third year of its existence. This society serves a useful purpose by bringing together men interested in tropical medicine, by promoting discussion, by publishing the results of original investigation, and by collecting specimens illustrative of tropical pathology, tropical conditions of life and tropical parasitology. Thus does this society do its important share in rendering life in the tropics agreeable and safe for the white man.

A Paris duel—no bloodshed—has recently been reported. Pistols were used, and coffee was no doubt partaken of amicably and mutually immediately honor was satisfied. Nobody was hurt, although excellent physicians—among them Doyen, the cancer specialist—were in attendance in the event of unforseen mishap. Reporters and photographers were grouped in advantageous positions to record and depict the more or less thrilling spectacle. Perhaps Dr. Doyen, who is up in that sort of thing, did the stage managing.

The Code of Medical Ethics has been declared by the Medical Society of New York State to be a merely suggestive and advisory guide. It, therefore, remains, as during the past quarter century, of no binding force within this State. There could have been no other result. Physicians who are gentlemen do not have to refer to a Code with regard to their conduct; and, concerning those who are not, no Code is possible of enforcement. Of the six thousand odd members of the Society, to whom the referendum ballots were sent, nearly one-half refrained from voting.

Albuminuria, declares Stengel (*Jour. A. M. A.,* Jan. 6, '06), does not by any means always indicate nephritis, unless it is abundant and persistent. Nor must the nature of the accompanying tube casts be too greatly relied on to determine the seriousness of the renal lesion; the occasional or even frequent appearance of hyaline casts need not cause apprehension. Centrifugation increases the likelihood of finding casts. The meaning of a trace of albumen is often exaggerated; frequent examinations are necessary to discover whether this element be constant or fluctuating. Hyaline casts are frequent not only in nephritis, but also in arteriosclerosis, gout, cardiac and hepatic disease.

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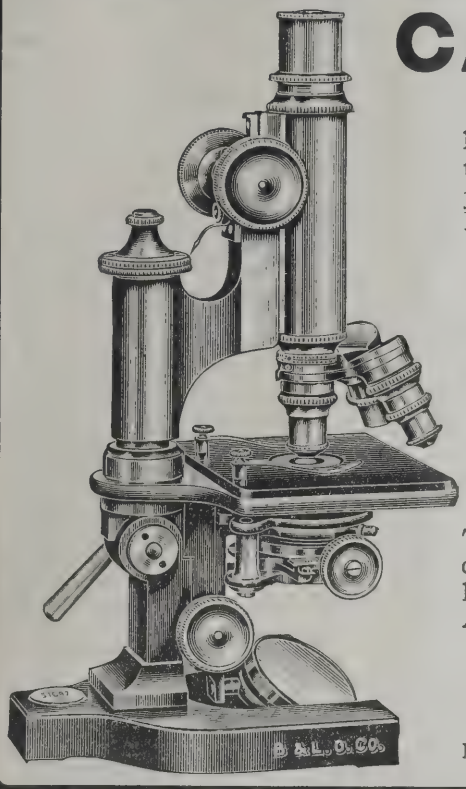

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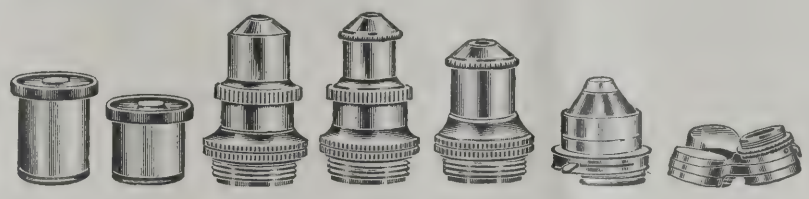

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SELECTIONS

Habit in Appetite. The so-called cravings of appetite are purely the result of habit. A habit once acquired and persistently followed soon has us in its grasp, and then any deviation therefrom temporarily disturbs our physiological equilibrium. The system makes complaint and we experience a craving, it may be, for that to which the body has become accustomed, even though this something be, in the long run, distinctly injurious to the welfare of the body. There has thus come about a sentiment that the cravings of the appetite for food are to be fully satisfied, that this is merely obedience to nature's laws. This idea, however, is fundamentally wrong. Any one with a little persistence can change his or her habits of life, change the whole order of cravings, thus demonstrating that the latter are purely artificial, and that they have no necessary connection with the welfare or needs of the body. In other words, dietetic requirements are to be founded not upon so-called instinct and craving, but upon reason and intelligence.

What Food Economy Means. Economy in food does not imply prohibition. It is neither vegetarianism, fruitarianism, nutarianism, or any kind of "ism." It means simply temperance in diet, with the application of available scientific knowledge; the use of reason and intelligence, combined with a due appreciation of the dignity of the body and the necessity of meeting the daily wants without imperiling that high degree of efficiency which helps to render man physically and mentally supreme. Practically, this implies the avoidance of the large quantities of proteid food so commonly made use of by civilized man, with the substitution of a dietary characterized by a predominance of the lighter vegetable foods. In this respect it leans somewhat toward vegetarianism. The heavier meats of our daily diet can be advantageously replaced in part by lighter articles of diet less rich in proteid and with more frequent addition of green vegetables, fruits and corresponding articles of food less prone to yield objectionable decomposition products.

The Metric System is very much more desirable than the English system of weights and measures. Its superior advantages are manifold and have been repeatedly demonstrated. Yet the fact remains that a very small minority of the Anglo-Saxon race will have anything to do with it. Those of our colleagues who are of this minority will be interested in the following very simple table of comparative weights and measures, for which we are indebted to *The New England Medical Monthly*:

1 gram = 15½ grains.
1 centigram = 1-6 grain.
1 cubic centimetre = 16 minims.
1 litre = 2 pints.
1 metre = 40 inches.
1 fluidounce = 30 cubic centimeters.
1 ounce Troy = 31 grams.
1 c. c. of water weighs 1 gram.

A litre contains 1,000 cubic centimetres and a litre of water weighs, therefore, 1,000 grams.

Hemostatic Action of Stypticin. The administration of stypticin in six doses of 0.05 Gm. (¾ grn.) each daily is highly recommended by U. Zoppeli in various conditions of the female genital organs attended by hemorrhage, where a more radical treatment is, for some reason or other, impossible. The hemorrhages ceased promptly in cases of parenchymatous fibroid, hemorrhagic endometritis, endometritis fungosa, uterine polyps, insufficient involution of the uterus after childbirth, and inertia. Good results were also seen in profuse hemoptysis where the usual astringents were ineffectual, and in hematuria due to catarrhal cystitis and to injury of the bladder.

Stypticin may also be employed as a prophylactic, to prevent hemorrhage during curettage. The author concludes that it is far superior to ergot, ergotin, gallic acid, hydrastis, hamamelis, and adrenalin; it does not possess toxic action and is in addition decidedly sedative.—*Aerztl Rundschau*, 1905, *No.* 47.

Needed Legislation. Increased attention is wisely directed to an alarming extent of sophistication in foods and drugs; the former commonly being contaminated by preservatives which are injurious, and the latter, under guise of harmless remedies, often owing efficacy to dangerous narcotics. This deplorable practice has been officially shown to be so widespread and demoralizing as to demand rigid legislation to protect both the consumer and the reputable merchant.

Several States have framed laws against the falsity of traffic in the commodities essential to life and health, and a bill is now before the Congress which, if enacted, will afford government protection against such abuse, and, by guarding against misrepresentation by misbranding, will extend authoritative assurance to those who place dependence upon recognized remedies in time of need.

The investigations prompted by state and national measures have necessitated critical examinations of various proprietary preparations as to their purity and fitness. Notable instances of such work were the investigations of the Ohio Pure Food Commission, the State Board of Health of Pennsylvania, and more recently the Illinois Pharmacy Board. In each instance Vin Mariani, analyzed from examples purchased in the open market, was proved to be precisely as represented and in conformity with the strict governmental analysis enacted in France, Germany, Russia and elsewhere in Europe.

This clearly indicated that the high standard of this preparation, established nearly half a century ago, continues unaltered, and is a justification for the distinctive endorsements which physicians everywhere have voluntarily accorded this unique restorative-tonic.

Disinfection of the Alimentary Canal. By M. R. Dinkelspiel, M.D., ex-Resident Physician of the Philadelphia Hospital. At the very beginning of the alimentary tract, the mouth. disinfection to the extent of producing surgical cleanliness is a practical impossibility. A great number of bacteria are known to find a suitable culture medium in the buccal cavity, and even in health pathogenic organisms are deposited there. It is for this reason that we are not certain, nor do we know at all the exact period of incubation of croupous pneumonia, the exciting factor of which is often present in the mouth in health, but causes systemic infection when the power of resistance of the individual has become sufficiently lowered. A great deal, however, can be done to make the mouth resistant to the propogation of organisms, and for this purpose I am accustomed to use Glyco-Thymoline. In the first place, it is alkaline, a powerful factor in protecting the teeth. It is a most pleasant mouth wash, leaving a clean refrigerant sensation after using. It is not toxic and can be used ad libitum. It has a remarkable power to disintegrate and dissolve mucus and it most efficiently depletes the mucous membrane of inspissated and abnormal depositions. In this way it acts not only on the mucous membrane of the mouth, but throughout the alimentary canal to the anus, making it equally efficient in stomatitis or hemorrhoids, to illustrate which I have selected five cases involving different portions of the alimentary canal, in order to illustrate the variety of affections of the digestive organs in which Glyco-Thymoline may be used. As an intestinal antiseptic I have found it to exceed in value by far both iodine and zinc sulphorcarbolates.

Case I. Stomatitis and Gingivitis.—Mr. R., age 29, presented himself to me with swollen and painful gums. The tongue was covered, especially the edges, with small vesicles, which would break down, leaving an ulcerated base. A mouth wash of hot 50 per cent. Glyco-Thymoline was prescribed with a saline laxative, resulting in a compiete cure in four days.

Case II. Acute Pharyngitis.—Mr. S. S., traveling salesman, contracted a severe acute follicular pharyngitis, the result of exposure to damp weather. He presented himself on Friday, desiring to be well enough to leave the city by the following Sunday evening. I ordered a gargle and mouth wash of Glyco-Thymoline to be used every three hours as hot as could be conveniently tolerated. He was completely cured by Sunday morning.

Case III. Hyperchlorhydria.—Mr. H. S., age 42, was troubled with severe hyperacidity of the stomach from one to one and one-half hours after meals. There was a history of considerable flatulence and attacks of eructations and pyrosis. He obtained some temporary relief from bicarbonate of soda, but as soon as the acidity ceased to remain neutralized he had another attack. Examination of the gastric contents showed considerable hyperacidity. The stomach was washed out daily with a 10 per cent. solution of Glyco-Thymoline and the latter given in tablespoonful doses diluted, one hour after meals. In addition fifteen drops of a tincture of nux vomica was given with the Glyco-Thymoline as a stimulant to the muscular fibres of

XXXVII

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Case IV. Intestinal Indigestion.—Mr. J. D., bank clerk, had been troubled for several years with colicky pains in the abdomen about two hours after meals. Constipation and diarrhœa alternated. There was considerable expulsion of gas. Salol did no good, neither did a rigid regulation of diet. High colon injections of hot 10 per cent. solution of Glyco-Thymoline at bedtime and one tablespoonful of a 50 per cent. solution one hour after meals, has succeeded in restoring the bowels to their normal functional activity and removing the abdominal discomfort.

Case V. Hepatic Torpor and Hemorrhoids.—A. B., an obese and plethoric man of 36, had been subject to frequent "bilious" attacks. He had numerous internal hemorrhoids associated with distressing and severe pruritus ani. He was placed on a pill of (calomel gr. 1-10, podophyllin gr. 1-8), one three times daily and a tablespoonful of Glyco-Thymoline in water one hour after meals. He was ordered to take rectal injections of hot Glyco-Thymoline in full strength of two ounces each three times daily and to apply compresses of hot pure Glyco-Thymoline to the anus at night. In three weeks the symptoms disappeared and have not recurred since. I have found Glyco-Thymoline not only an excellent remedy in all catarrhal conditions, but an effective prophylactic. If administered early in the summer at frequent intervals to infants and children the liability to diarrhœa and intestinal disturbances will certainly be minimized. Likewise in all individuals who are prone to constipation and torpidity of the liver it is an excellent preventive therapeutic measure.

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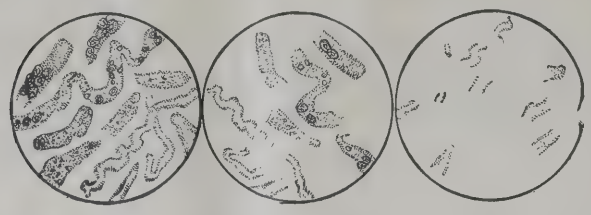

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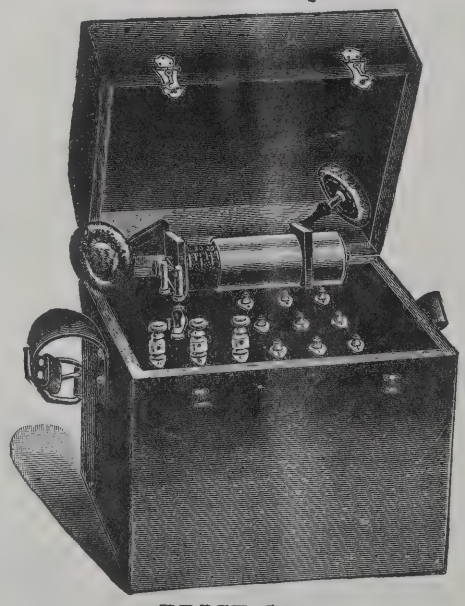

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The additional features to the plan as adopted by the Council for which recognition is desired are as follows: 1. Recognition of the right of materia medica experts to accept pay from those engaged in manufacturing and marketing materia medica products for expert work on such products. 2. Recognition of the principle of protection to the commercial and scientific interests of the manufacturers by the proper application of the patent and trademark laws, on the grounds that it is just as ethical for materia medica experts and manufacturers to be associated for commercial gain under patent protection as it is for medical authors and publishers to be so associated under protection of copyright. 3. Recognition of the intimate relation and absolute dependence between pharmacy, or the art and science of preparing medicine, and drug-therapy, or the science and art of applying medicine to the cure of disease. The Society suggests the adoption of the "working bulletin" system of collective investigation, so that the medical and pharmacal professions may have placed in their hands full information regarding the therapeutic properties of new materia medica products, as well as a knowledge of their chemisty and pharmacy. Unless the right of materia medica experts to take pay for expert work on controlled materia medica products can be recognized as ethical, it irresistibly follows as a logical sequence that the prescribing of controlled materia medica products is unethical; in which case it is the duty of the American Medical Association and its Council to emphatically protest against the control of materia medica by patents and trademarks, as well as to protest against control by secret formulas and processes. For, on the one hand, it is unfair for experts to work without pay and have the manufacturers reap the profits, and. on the other hand, it is unfair for the manufacturers to publish full knowledge of their discoveries for the benefit of science without protection to their legitimate commercial interests. Without such publication there can be no progress in the science of materia medica, and humanity is the loser. Therefore a system of protection to legitimate professional and commercial interests in this connection is ethical and right, and in accordance with the altruistic ideal upon which the medical profession (including pharmacy) is founded.

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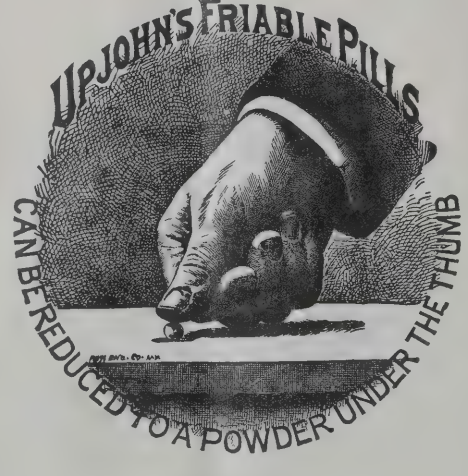

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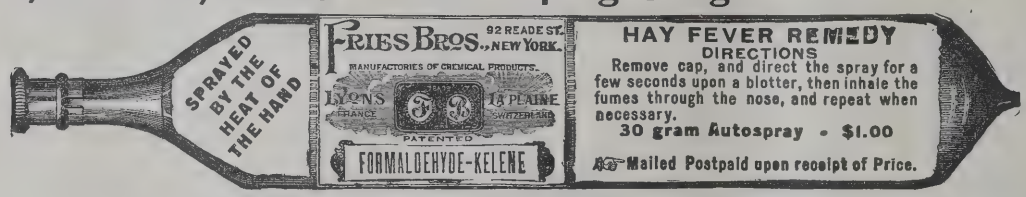
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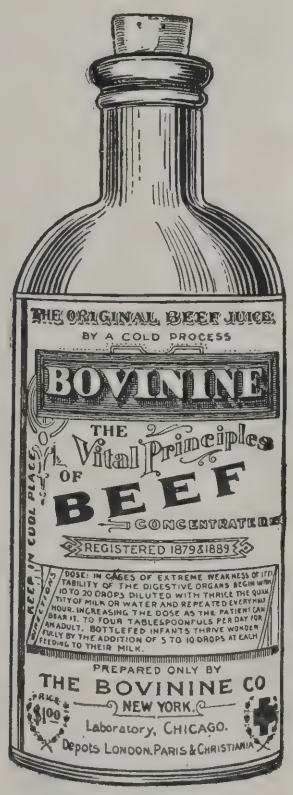
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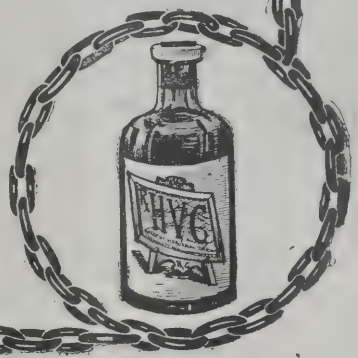

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Thus, it would be contrary to all precedent to ask for any special favor from the railroads and yet we believe that committees in charge of transportation for medical congresses and meetings should insist upon the same discount that is extended, without question, to the G. A. R., to Masonic organizations, to drummers, teachers, librarians, brewers, labor unions, and, in short order, to pretty nearly every other class which gathers in convention in large numbers. Even more important than the question of rates, is the matter of minor courtesies in regard to round trip tickets. It sometimes seems that, having granted a concession from ordinary first-class, single passage rates, the railroads try to get back at the purchasers by acts of deliberate meanness. Obviously no road would adopt such a policy deliberately. In the first place, even soulless corporations are not composed of men of this calibre, and, in the second place, if they were, such a policy would be bad business. The present method of validating tickets is a nuisance of the worst kind. The ordinary individual fails to comprehend the anxiety of the railroads to prevent the transfer of tickets. The original purchaser pays the price asked for a commodity and guarantees either to use the ticket or stand its loss. There is nothing personal in the discount offered nor in the attention paid to the passenger. Any one is welcome to purchase a ticket sold on account of an A. M. A. meeting and the railroads urge the public generally to avail themselves of this rate. Undoubtedly, if there were no restriction as to transfer, many persons who would otherwise pay full rates, would travel in either direction at a reduction. On the other hand, many who could not afford either passage at full rates would travel because of the reduction. It would seem that the latter factor would more than compensate for the former. At any rate, the number of persons compelled to travel in one direction to a fixed point and to remain for a period not covered by the ordinary excursion ticket is small. However, if the railroads insist upon non-transferable tickets—and we must admit that every one knows his own business better than an outsider—it would seem that other, more convenient and less expensive methods than the present validation method might be practiced. Each ticket is signed and a false signature is punishable as any other forgery. Indeed, as carried out at present, the validation method does not prevent the transfer of a ticket although it certainly imposes an obstacle to such transfer. But, how much more effective, convenient and economic it would be simply to require conductors to get the signature of the purchaser, on each passage. At any large gathering, the inconvenient location of the validation office, which is rarely near headquarters or a station, and the delay and fatigue of standing in line, or the necessity of catching a particular train in an emergency, unquestionably induces quite a number of persons of means or feeble health to purchase full fare return tickets. Still, it would scarcely appear that enough could be made in this way to pay the considerable expense of validation. Moreover, in the course of years, the argument of the railroads that it is better to pay full fare each way, is also an argument that it is better not to travel at all. And it is an open question which way the public is interpreting this argument. At some places, the service at the validation office has been notoriously inefficient and trains have been lost by those who allowed reasonable time for viseing tickets. The limitation of passage to certain trains is also a matter of some inconvenience. For example, at one A. M. A. meeting a road advertised its round trip tickets as first class in all particulars, even to the degree that passengers could go on its pet Cannon Ball Express. Few availed themselves of this privilege for the outward trip, on account of inconvenient hours, but, on attempting to return on this, the only convenient train, they were informed that while they had the privilege of *going* on it they could not *return* on it. Another road promised a connection which was not and never had been made and returned its passengers by four different connecting trains, necessitating three changes of cars and submission to all sorts of inconveniences. Perhaps the limit was reached at Boston, where the regular transfer company was forbidden to issue through checks for baggage, on A. M. A. tickets. This was not only an inconvenience to passengers, entirely without reason, but an actual loss to the transfer company in which the railroads themselves were interested, as passengers who did not give an unusually long notice for the removal of baggage were compelled to employ independent baggage wagons in order to get trunks to the station in time for checking. We would respectfully urge upon the officials in charge of medical conventions, and, especially, those of the A. M. A., that they endeavor to secure for future conventions the following concessions: 1. A round trip rate and time limit at least as favorable as that ordinarily granted for other excursions. 2. The sale of a ticket which shall be good for return without validation, and at any time up to the limit, the original purchaser being compelled, if desired, to establish his identity by signature, before any conductor. 3. The validity of the ticket upon any train if Pullman tickets are bought. 4. The assurance of all privileges as to checking, use of dining cars, etc., ordinarily enjoyed by first-class passengers.

The Treatment of Infantile Diarrhœa. I have found the following to be the most satisfactory method of treatment for the summer diarrhœas of infants. Firstly, administer a purge consisting of castor-oil, rhubarb, calomel or saline. In my experience the last two are the most efficacious, one-tenth of a grain of calomel being administered every half hour for at least four doses and sometimes until the motions assume a bilious hue. The saline is given in this manner: dissolve two teaspoonfuls of sulphate of magnesium in a teacupful of warm water, flavor with a little lemon, and then give two teaspoonfuls of this mixture every twenty minutes until the bowels are well cleared. Where the motion is of a dysenteric character the colon must be flushed out with some weak antiseptic solution. So far as medicinal medication is concerned I have had the most brilliant results with copper arsenite given in doses of 1-1000 grain to 1-100 grain every ten minutes for from four to six doses and then every two hours. A most useful method for removing the horrid fœtor of these cases is to give the sulphocarbolates of zinc, soda and lime of each ½ grain; if given in combination with bismuth the bismuth will no longer blacken the motions, but the sulphocarbolates must be of the purest description or they will produce vomiting and other undesired effects. I find the subgallate or salicylate of bismuth acts better than the subcarbonate or subnitrate. The other drugs which I most frequently use are cotoine, emetine, and hydrastine. In extreme algid cases I find the most useful aids in a good hot bath and a hypodermic injection of atropine sulphate 1-500 grain to 1-250 grain, or glonoin 1-250 grain. Atropine sulphate has been recommended for the extreme thirst in doses of 1-5000 grain to 1-1500 grain every half hour. Opium I never use, but give codeine sulphate 1-25 grain to 1-12 grain; or Gregory's salt 1-67 grain to effect. I have always thought that the better way of judging the dosage of narcotics for children was not so much the age as the weight and status præsens of the individual case. The best pain relievers I have found to be hyoscyamine 1-1000 grain, and strychnine arsenate 1-134 grain, every ten minutes to effect. The diet should be albumin water, oatmeal water, or plain ordinary water, flavored with lemon; if possible all milk should be stopped for at least forty-eight hours. The beef teas and extracts are of use as the easiest way of making broths without any grease. The high fever of these cases is best treated by small doses of aconitine or good hot baths.—William Ayres, B. A., M. D., Dub., Brierly Hill, Staff., May 28, 1906, in *The Lancet,* June 2, 1906.

X-Ray Burns. At the 337th regular meeting of the New York Dermatological Society held Nov. 28th, 1905, the subject of X-ray burns was taken up, and Dr. Henry G. Piffard, Emeritus Professor of Dermatology in New York University said, according to the Journal of Cutaneous Diseases, "that he had obtained the most benefit in treating these conditions from Antiphlogistine, chloride of zinc, high frequency current and ultra violet rays."

SELECTIONS

The Family in America. America, with its evils of divorce (July *Century*), has acquired an unfortunate reputation from the point of view of the sacredness of the family—a reputation, on the whole, which it does not deserve. A singular and dramatic international incident of recent occurrence illustrates the fact that an overwhelming body of public opinion sustains the family institution. This incident has been described by certain natives and foreigners as an illustration of national pharisaism; as having elements of hypocrisy, cowardice and cruelty. It may possibly have had touches of these unlovely vices, so far as individuals are concerned, but the action of public opinion in such cases will always be in danger of taint and error or hypocrisy in details. The public opinion of America has been tested, and it is opposed to "free love" and all apparent attacks on the sacredness of the family; it may express its opinion in any given case with awkwardness, or without sufficient discrimination—that is not what we are now considering—but the opinion is sound and right. Our people believe that the family is worth saving, and all good citizens and wise men should be glad.

Treatment of Burns With Zinc-Perhydrol.—R. Jacoby has employed the combination of hydrogen peroxide with zinc, known as zinc-perhydrol, in many surgical affections, but has obtained the best results in burns. In recent burns, the pains cease at once when the dressing is applied, and the wounds heal within a few days without the development of suppuration. In old burns, a reaction sets in very soon and cicatrization occurs rapidly. The best method of application is in the form of powder, with four times the amount of talcum, or as ointment with the same amount of vaselin.—*Therap. Monatsh.*, Dec., 1905.

A prominent New England physician recently said: "I have found Papayans Bell the most satisfactory combination I have ever employed in the treatment of digestive disorders. The uniformly good results I obtain from their use gives me renewed confidence every time I prescribe them. In my hands the administration of Papayans Bell has not only produced paliative effects, but in many instances they have enabled me to permanently relieve hyperacidity, atonic gastritis and intestinal indigestion."

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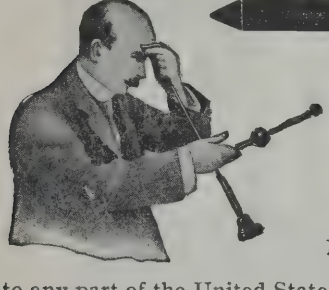

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Prepared only by

Charles Marchand

Chemist and Graduate of the "Ecole Centrale des Arts et Manufactures de Paris" (France).

57-59 Prince Street, NEW YORK.

SELECTIONS

Prickly Heat. Many specifics have been advocated as a sure cure; very few, however, have been found satisfactory. An exception may be claimed in favor of Tyree's Antiseptic Powder, says Dr. M. E. Chartier, Faculté de Paris, France, as it possesses curative as well as preventive properties. Besides, it is quite inexpensive, five or six tablespoonfuls of the powder in a gallon of water are quite sufficient for an ordinary sponge bath, which will act as a preventive. A larger percentage may be necessary to cure the most troublesome case. There are to be found in the drug stores many preparations containing boracic acid and talcum compounds. These preparations, generally used in a dried state, have the great inconvenience of clogging the pores of the skin. This is not the case with Tyree's Antiseptic Powder, as it acts as a deodorizing, stimulating agent. Sample and particulars from J. S. Tyree, Chemist, Washington, D. C.

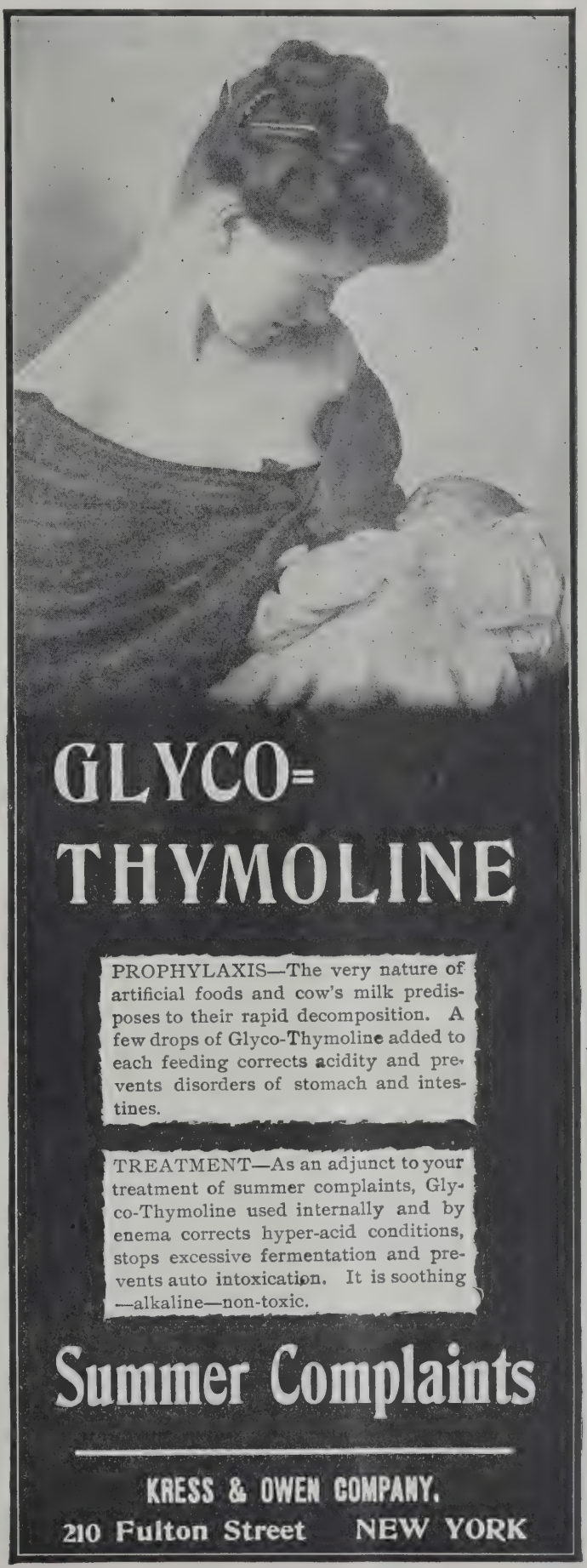
The New Pharmacopœia.—The eighth decennial revision of the United States Pharmacopœia, which was due in 1900, became official on September 1, 1905. A number of articles considered obsolete have been dismissed, and nearly an equal number of new substances have been added. An effort has been made to bring tinctures to a uniform 10 per cent. strength, while drugs containing alkaloids must be assayed and brought to a standard before being dispensed. Among the important additions are cocaine and Coca Wine, the recognition of the latter endorsing a flattering tribute to M. Mariana, who was the originator of this preparation which has only now been made official. Coca leaves, according to the U. S. P., must contain 0.5 per cent. of ether soluble alkaloids, by weight, and Fluid Extract of Coca must contain 0.5 grammes of ether soluble alkaloids, by weight, in each cubic centimeter. That means cocaine. Nothing is said of the several other alkaloids contained in Coca which are not soluble in ether. Surely great bodies do move slowly. Cocaine was discovered nearly fifty years ago, and it is an equal number of years ago that M. Mariani first introduced Coca Wine to the medical profession. Notwithstanding the fact that "Vinum Cocæ" is now official, physicians who desire the original preparation must carefully specify Mariani in order to obtain the results which have for years been advocated as due to Coca—made available in Vin Mariani.—*The Coca Leaf,* Sept., 1905.

A distinction of no mean degree has been conferred upon an American book, the joint authorship of Drs. J. Madison Taylor and William H. Wells. The revised second edition of their treatise on "Diseases of Children," published by P. Blakiston's Son & Co., of Philadelphia, has been translated into Italian by Dr. Mario Flamimi, of the Pediatric Clinic of Rome, with contributions by Prof. Concetti and Dr. Valagussa. The translation has proven very popular abroad, and the occasion is one of felicitation, not only to the authors but to American medicine generally, inasmuch as the work was chosen as being especially adapted to clinical teaching in Italy. Few American books have attained such honor. Its success abroad is but a repetition of the favor which it enjoys here.

The Canadian Journal of Medicine and Surgery for July is illustrated with some 40 pages of half-tones, printed on special coated paper, making a handsome souvenir of the meeting of the British Medical Association in Toronto. It is certainly a very creditable piece of journalism.

The New York Botanical Garden has recently received the most valuable single exhibit ever placed in its economic museum. This came from E. Merck & Co., of Darmstadt and New York, manufacturers of chemicals. It is a collection of plant constituents, including alkaloids, glucosides, amaroids, sugars, starches, plant acids, coloring principles, fats, waxes, and some rare aromatic principles. The number of exhibits is between 400 and 500, comprising not only the most powerful poisons, the most active medicinal principles, and other things for which uses are now known, but many things extracted from plants only experimentally, for scientific purposes, for which it is hoped uses may be developed in the future.

Indications for Veronal. A. Zirkelbach employed veronal in compensated and uncompensated vitium cordis, renal disease, asthma of different origin, the various infectious diseases, pulmonary tuberculosis, gastric and nervous diseases, and is very well satisfied with the results obtained. The initial dose was 0.3 to 0.5 gm. (5 to 8 grs.), and if sleep did not appear in half to one hour, the dose was repeated. Since every after-effect which has been described in the literature appeared after very large doses, more than 1 gm. (15 grs.) was never given. As a rule, the desired action resulted in a half hour and lasted from five to nine hours. Cases of insomnia of nervous origin seem to be most suitable, and the action here is often manifest on the following night.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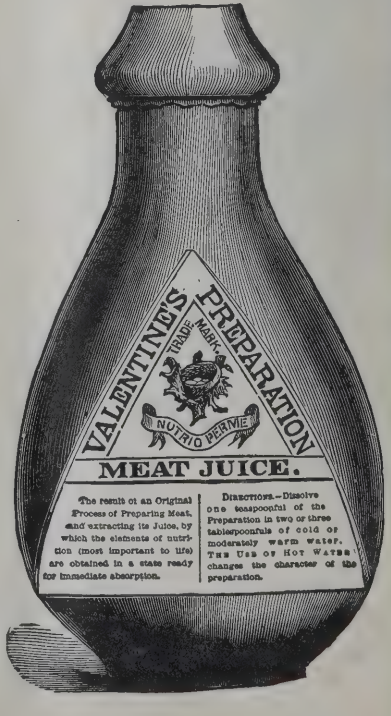
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Directions.—Dissolve one teaspoonful of the Preparation in two or three tablespoonfuls of cold or moderately warm water. The Use of Hot Water changes the character of the preparation.

SOCIAL EVIL DILEMMA.

BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA, PA.

TO the enlightened moral sense of the physiologist and the physician who study the fundamental conditions of human existence, the greater odium of the social evil or promiscuous sexual accommodation is its actual propagation from person to person of infectious disease.

As the wheels of humanity run their allied associations in this world, it has turned out that the ordained pulpiteer of the Sunday sacred desk is ethically "not in it" as a practical disciple of social purity and sexual health. Christ, the exemplar by eminence, girded himself with a drying towel, and washed feet—typical of personal service for the Kingdom of God on earth, and of physical cleansing essential to forgiveness of sins. Paul had been a political murderer until his peremptory arrest on his way to Damascus, which made of him a great preacher instead of a cruel persecutor. St. Paul could bravely strike from the shoulder out at the social errors of the Corinthians and Ephesians: "How be it that was not first which is spiritual but that which is natural." The pulpit, which is enlisted in gauging the moral advancement of humanity has for the last fifty years won eminence in phrasing ideal platitudes of theology on lines or levels of the immaterial spiritual Kingdom of God, pictured by faith of rather far-away comprehension; but all policy of idealizing that is markedly obsequious to sentimental avoidance of ugly subjects, because of the main chance in popularity and salary, is apparently oblivious to the primary assets of the fleshly Kingdom of God on this earth, through which and by which the spiritual Kingdom here substantially is, and has its being. "Dearly beloved," exclaimed Paul, "let us cleanse ourselves from all filthiness of flesh—and of the spirit!" Flesh first, spirit next—since the spirit could not be cleansed while the flesh remain corrupt. Therefore, while our accepted and honored conservators of human morality elaborate the spiritual beauties of the beatitudes in phrase that coyly shuns the authorized restrictions of personal pollution in social vice, and thus mentally deceive themselves concerning radical essentials of personal salvation, the physician meanwhile who can clean his conscience by the sanitary process of purifying and healing and courageously devising preventive protection of society from physical pollution of sexual disorders, substantially takes precedence on the front lines of the world's practical reform for the betterment of the race.

Without a personal body there is no personal spirit. A clean spirit is not evolved from a sexually diseased and distempered body. Sexual disease haunts the avenues of sexual appetite and desire. These sources of corruption may be discerned and cleansed by the expert diagnoser and remedial. In eight cases out of ten they are adroitly concealed by the fast woman who pursues business for ducats, and by males—as a man of social standing once said to the writer—"I always gave back to some one all that somebody gave to me—give and take!" Nothing sears conscience so hard, or is so acutely resented as the scorch of venereal infection when nature craved a satisfaction or was correspondingly yielding a gratification. "Doctor, can you stanch this discharge by Sunday, so that it won't tell on me?" inquired a young woman with a gonorrhea, and to whom the writer had been called for medical aid. "Why do you say 'by Sunday'?" I inquired. Listen to her reply: "Because I can't afford to stay out of business. I expect a couple of young men in from the country next Sunday; I can stand a little pain if I can hide it, you see; but I can't get along without money. I'm afraid the boarding mistress won't keep me if I can't take company. But I never again want to see the man that did this nasty thing to me."

Such is the starter of the disease problem of prostitution. How many unsuspecting male victims might this uncured girl inoculate in a month? How many other girls or women might eventually become inoculated by this desperate young woman's dupes? Hence the venturesome and impulsive young, the seeker of experience, the ignorant and erring stand in imperative need of sanitary and beneficent protection by any system of sensible control, which can restrain the wholesale diffusion of quite inerradicable disease among population—a contagion contracted by seeking physiological response to natural physiological sexual appetite. For it must always be borne in mind, by the righteous as well as by the unrighteous, that the satisfactions of their seed or sex functions with which the human is endlessly endowed, either inside or outside of regulated matrimony, will ever voice in clamorous desire the purpose of the Almighty propagator of sexual union. As we have recognized in a previous paper, that in spite of all that we may religiously hope or reason or philosophize to the contrary, the transmitted appetite and impetus for sexual conjunction between male and female never has been and never can be abated while God peoples the earth by the desires and prowess of the sexual function, perpetuated in pleasure by parental impress in the fact of generation. One mission of the pulpit is to decry against sin. But suppression of the sin of spreading venereal contagion will require the intervention of law. Oratory has never arrested the spread of syphilis. Listeners to sermons that only dare to make allusion to "social sins" soon are taught that the subject is to be recognized by sugar coated suggestion only among nice people. Denounce if one feels that way—doing that tells other people what one says. A gust of hot air never yet has scrubbed a slimy cellar. Frowning upon legal agencies that compel men and women who are physically contaminated by the slime of prostitution —compel suspension from all risks of intercourse until cleaned and cured—is but assuming a mask of purity whitewash if meanwhile the ulcer of sexual rot is rankling in the veins and flesh of innocent women and children, and while families are decimated by crippling cachexias and tuberculous degenerations, while women are being numerously unsexed by surgical operations for removal of catarrhal ovaries and nondescript pus sacks, while children are robbed of hale and sanitary birthright or of even the privilege of being born alive, while physical stamina is being sapped at its roots, and bald-headed manhood prematurely uncovers the accidents of impetuous misguided sex-adventure among the haunted groves and caves of passional riot. How, then, stands the dilemma?

This shamefaced diplomacy of shirking moral responsibilities that hide social stench is only arrant sham and prudery, unworthy of all sincere pretence to sanitary valor and Christian civilization. Christ healed the woman of her offending internal plague of twelve

years' duration. If there is any available virtue in medical and religious sense, let it authoritatively and wholesomely go out to the arrest of social sexual disorders that promiscuously endanger the human family at large, the church family included—or else pull down the blinds of professional decency and of mimic stage poses behind the exotics of prudery. There have been some rather pretty exhibits of what was called "moral sentiment" against the recognition by law of the social evil by making registration of such women as are found in that life, and giving under certified conditions of clean health the civil right to pursue the avocation of sexual means of livelihood within limits. Objections to legal regulation were spread like some picture fan of deference for "the correct class"—objections to taking sanitary control of supervision of an insuppressible social condition of danger—meanwhile even our ever-valued religious circles being grilled by hot-house disorders through the accidents of natural propensity! How awfully uncomfortable it is to be just too nice to need any laws in a country like ours!

"Why commit the laws to recognition or license of what is sinful?" the opponents to control exclaim. "Why attack in open field instead of spying around the bush and hauling these unfortunates to prison among thieves and murderers? Why add a protective straw of respectability to the social evil by registration and legal inspection? Why have it known that a sick prostitute may be quarantined, as is done with cases of diphtheria and smallpox among decent folks?" But, we answer, the days for covert mischiefs are ending. The time is ripe for the square deal. President Roosevelt would be Roosevelt only were not that he is a man who "does things" for the betterment of all classes. The writer has had his sense of justice singed by the flambeau of the anti-control apostles of past years, who fought tenaciously for what they called women's rights to conceal her private diseases if she had any, and hence to offer and contribute burning punishment to all men who sought and accepted the gratifications of promiscuous service. At that time there lived a lady of eminence who published a monthly magazine, in Washington, D. C., devoted exclusively to combatting the sexual propensity of men and all forms of legalized registration and medical examinations and quarantine of women sexually diseased in promiscuous life, by which special examinations venereal disorders should be repressed for the protection and benefit of population. Her specious arguments induced the present writer to prepare a more just and logical rebuttal for publication in her devotedly edited journal. This offer of broader reasoning she returned to me unpublished because its doctrine was at variance with the avowed policy of her magazine. Its return was accompanied by a long private letter on the inhumanity of official surveillance and intrusion on woman's sacred rights to her person and liberty in the land of the free. Realizing that this woman champion chose to consider nothing except her chosen hobby, in a recoil of disgust my returned article and the over-ripened lady's letter were together committed to flame; but to-day I wish that I had saved her fastidious argument against any law that gave recognition to the social evil by the process of registration and regulation. The sainted lady was of the passionless type who contend that mankind should abstemiously train themselves to discount their sexual desires, control and subdue their animal nature by cultivating higher planes of ambition, etc., etc.—and that no encouragement of protection should be afforded them by stated routine examinations of public women for enforced cleansing from venereal disease—but rather let the fact of danger from contagion that lurked among promiscuous women naturally deter youths and men from exposing themselves to its risk in fast life! Suppose that line of eloquence was applied to most other sorts of evils?

Mrs. Butler co-operated with the Social Purity Societies of the world, she represented the fibre of strenuous persistence, she won the ear of reprehension, instigated anti-regulation conventions in the United States and England, hatched expressive protestations against laws that involved women sinned against by distempered men; these proclamations were backed up by the long roll of autographs in appeals to municipal authorities. She and her co-laborers speciously contended that enforced examinations of even the brothel prostitute by laws of personal discrimination was class outrage and indignity pathetically degrading to all civilized womanhood. It was furthermore contended by these good but inventive social purity apostles that any Continental system of license and regulation would operate adversely to social purification because of the inferential protection that evil-natured girls would dispose themselves to reckon on in event of venturing on the paths of fast life. Much of such reasoning would reverse its arguments as soon as the problem could be viewed in the light of liberal interpretation for the defense of the health and homes of the masses. For social and ethical integrity men whose broad insight, should have been sufficiently clear to face public error and to stem the tide of fastidious criticism, instead of shivering backward into frosty shadow to let the rot of sexual depravity sweep itself onward through the misfortunes of humanity. Mrs. Butler's fanatical crusade won popular victory against the St. Louis regulation régime, beat back with blackened eyes the proposed sanitary social reforms for Chicago, New York, Philadelphia and other overthronged cities; threw into comparative dismay the retreating sanitarians of the social evil—sanitarians who have been enthusiastic to excess in planning resistance to every other line of physical contagion except the most subtle and persistent propagated from venereal sources.

The hindrance of a needful reform for better protection of the present and future generations deserves to be sincerely lamented when youths of both sexes, young men and women, even unsuspecting wives, are unexpectedly inoculated with so grievous a form of contagion that is personally preventable. The situation is a lamentable travesty of sanitary science. Self-placated concession to sentimental repugnance should never disarm duty in any noble service for the betterment of human life and moral progress. The dilemma of this study not only merits energetic consideration, but active handling by intelligent brave minds. There are superior aims of purpose beyond the quibble about regular and necessary examinations of the physical condition of the public woman in the interest of her own welfare besides the much greater interests of the many who directly and indirectly come to grief through her. Once on the stage of fast life, there is

no hesitancy about trapping the young. Conscience is drowned with a bottle of wine. The winning of the dollar is the strategy of reconnaissance. "Old stagers" gloat over the conquest of the young and inexperienced. Shall our Bible class pupils and sensitive church organists have thrown around them no timely systematic protection against early but perilous indiscretions, roused into activity by the crave of sexual appetite, and which are greeted and gratified for a few shillings by the transplanted Continental courtesan, who by nature and education may have lead a shameless life quite from childhood? Heaven and earth!—no laws, no regulations for America?—while European towns are annually pouring their thousands of vulgar population into the lap of the United States for what they can get! A few years ago I had for a patient a youth from a prominent Sunday-school, who, with a fellow church comrade, had ventured a visit to a down-town resort. The second venture with the same girls rounded them out with an excoriating, degrading gonorrhea each. A few months later I was consulted for relief of similar affliction by a youth of refined instincts, who was a member of a Bible class of which the pastor's wife was teacher, in another neighboring church. This youth was entertained but one time by a smart sort of girl and the damage was started. The result was he abandoned his Bible class because he could not bear to look at his teacher again. A yet more serious case. A young woman came to this city for a position. She was also a Bible class pupil when at home. A stranger, she found a boarding house up-town which she supposed was nice. The woman who kept this house induced this neat, almost handsome lady boarder to take in sewing temporarily for a few families. A keen-eyed young man called often and got introduced to the new seamstress. For a couple of weeks his attentions were modestly avoided because he was a stranger. Presently, however, the housekeeper induced this girl to allow the young man to take her out evenings for some entertainment. In a week more he had "got the best of her," briefly one night after returning from a place of amusement. From the time of this adventure the young rake stayed away; the devilish work had been accomplished. In a few days this young women discovered she was acutely ill and did not know what to do. The woman who kept the house told her to go into a hospital, and as she had "the disease," she could then enter a certain house "where that kind boarded to make their living off of men." Hourly growing worse and in great mental distress, since her kind landlady had informed the girl that she could not stay there unless she had plenty of money, this child of scheme and misfortune started out to drag herself around the streets till she could come to some conclusion what to do. To go home, and so far, in her distressful and degraded condition, she felt was impossible. Her good mother then would have to know it—and her father would come to the city to shoot this man who had ruined her! As she wandered along, she saw my professional sign. Something told her to ring the bell and tell her troubles to one who could advise her in kindness. I found her burning with fever and inflamed with acute gonorrhea to the limit of her sensitive endurance. We concluded that the old woman had methodically assisted her rascally nephew to debauch this innocent and attractive girl, and through her shame, make a fast house recruit of her for the remainder of life—short undoubtedly. I advised her to defeat such downfall by trusting her mother. That her father would not injure her reputation at home by exposure of shooting the young demon who had pursued her to get her in disgrace and into the house of ill fame. That if she could manage to prop herself up in one corner of the car seat for the hundred miles she must ride, the cars would land her to the care and consolations of her best friend, her mother. That her mother should employ confidentially a careful physician to carry her to cure and enable her to resume her usual place in society—without the world, or even her own father, learning of the burning outrage through which she had come. The seducer of that girl had evidently had his debauch and training in a house of prostitution—and his hawk-eyed aunt was a procuress for that house of abominations. Let all girls who seek positions in strange cities hear of this case and take timely warning.

Mrs. Butler's crusade against legal regulation and sanitary control of prostitution in the United States and in European cities was a crusade of strenuous fanaticism against advanced decency of human nature and human habit despite the unquenchable antagonisms of sexual desire and mastery. Did the keen-witted postulates of Mrs. Butler's editorials and contemporary contributors unsettle American judicial reason—and for how much longer? What dilemma do we find confronting the population as a result? Consumption has increased at incomputable extent, cancer has increased at corresponding ratio, cutting operations for ovaritis and salpingitis have multiplied beyond decent computation—all of these the appalling proclamations of specific poisoning and degenerate blood. What has been the result? At the time of this social purity crusade against legalized registration and official control, it was estimated that there were twelve thousand prostitutes in New York City, and about one hundred thousand harlots in the United States. Boston, Philadelphia, Washington and San Francisco were then reeking with syphilitic pollution from prostitution. About ten thousand cases of venereal diseases were annually treated in the public institutions of New York, to say nothing of the numbers who sought private advice. It was authoritatively estimated that thirty thousand males were daily infected with venereal poison in the large cities of the United States, a large proportion of whom were residents of inland towns, whither they returned from city resorts to incidentally and eventually spread their share of sexual contamination. Since Mrs. Butler's crusade of hands off because of the sacredness of female privacy, the recruits to prostitution have outnumbered the declension and the deaths in the ranks. A recent author of prominence, Lydston, but two years ago affirmed that a later estimate of prostitutes in New York City puts the figures at twelve to fifteen thousand, with two thousand houses for promiscuous entertainment—and he calls this a low, a "veritable whitewash estimate." Other cities rate in proportion to New York always. Cities like Chicago, St. Louis, all the major and even minor cities, forge ahead in the strenuous revel of human passion.

The general police system of great cities has been egregiously demoralized by the graft of divy hush

money exacted from the unhappy creatures who need to ply their precarious "business," who sell their accommodations together with their desperate risks of disease involved. Few women remain long in the walks of prostitution for reason that without sanitary supervision, the hapless, erratic creatures in a few years discover that the vocation of the public woman is killing. It is the constant inflow of recruits, for one reason or another, that keeps the ranks of evil life so full. We observe by comparison of figures and the continued prevalence of venereal diseases, how manifest it is that the sexual purity crusade against legal control has won nothing for sexual morality and physical decency through consequence of exemption of public women from sanitary restriction by registration of houses and inmates. It requires more than a conservative precept and clean understanding to defend society from uncleanness. It requires the authority and the regulation of law to measure justice and erect barriers between the infection of the diseased and the safety of the well. I think it was about thirty years ago, in a public address to the doctors of the United States, that Prof. Samuel D. Gross said that nearly two millions of the population of our country were then infected with the poison of syphilis. It should be also noted that there is tremendous transition in this country. In their state of slavery the negroes of the South were under the control of superintendents of plantations; but in liberty the revel of libidinous propensity among the blacks has spread its promiscuous pollution to especial extent, running through minors and adults with very damaging effects.

While the exigencies of health demand legalized means to reduce the hazards of sowing to the winds by the female who trucks out physical rot, I earnestly favor getting the yoke of restraint also on the male who offers sexual comradeship at the door of physical entertainment by woman. The commonwealth has as much right to assume legal control over one danger of contagion as over another—and none is so corroding and persistent as the venereal. But the more definite means of prevention needs be deferred to a future study. To any resolute sanitarian it seems phenomenal how the awe of moral timidity was biffed into the hesitant consciousness of our medical representatives, into the saving prestige of the great church ministry, into the half-comprehending social forces of the day by the Spartan boldness of Mrs. Butler's social purity crusade of wordy dialectics, that purified nothing and nobody impure because it never cleaned out anything in need of actual cleaning. This half-hearted timidity is even yet sensitively placarded around the night chambers of public sentiment, while the riot of sexual diseases continues to sack the world of its physical stamina and sacred virtue, its physical vitality and moral innocence.

A few days ago I received a circular invitation to work with the "Philadelphia Society for the Study and Prevention of Social Disease." The officers are men of high social and professional standing. In more than one sense this honorable society starts out at least thirty years behind the logical demand of the day. There is no substantial niche of reform in its platform that was not strenuously urged for practical attention in a series of papers written by the present Dr. Swayze and published in the *Philadelphia Medical and Surgical Reporter* under editorship of the eminent Dr. D. G. Brinton, 1877. But "the sun do move"—and although so slow to rise from its sleepy pillow of misty deference, it should be greeted now with every encouragement to practical activity beyond the sterile past, which by routine passively prescribed rest and styptic injection for the concourse of gonorrheics, and patched up the disabled squads of syphilitics with iodides and mercurials. This new Social Disease Society has scanned along many fine lines of awakened comprehension, but unobtrusively veils from the direct repression that law should afford for positive leverage against the slippery wheels of down-grade infections. The hesitancy of this worthy society is seen in the following line: "At present neither the medical profession nor the lay public should be asked to sanction measures other than those of an educational nature." Now when this society educates population how to repress the gnaw of sexual appetite and how to obliterate sexual attraction when in unappeased condition, will it prove to have demonstrated common sense. It may be now reminded that it has in this barren respect merely assumed pose on the Mrs. Butler platform of thirty to earlier years ago. Another line is but a repetition of the Mrs. Butler fiasco: "Much will be accomplished if the laity, male and female, be informed of the need for early instruction in the home, especially regarding Nature's laws, and as to her imperative demand for chastity in both sexes." The plausibility of this is in the ear. Man and woman were not constituted to exhibit lives of sexual frost when woman menstruates every month and man's sexual endowment prepares him for intercourse every five days. Chastity is defined as the quality of sexual or moral purity, continence, virginity or celibacy." Now, if men could be continent or chaste without woman they would not need to marry. It may be inquired if any officer of this model society has not found it more comfortable to cohabit with a wife than to live in absolute chastity as a celibate. Way back in the fifties or sixties Fowler and Wells taught and published similar doctrines. Dr. Napheys, about the same time, in "Physical Life of Woman," earnestly taught the same doctrine. But all in all, no amount of preachment of this sort has cowed the functions of human nature, has obviated the evils of prostitution or prevented the spread of venereal contagion. It is all right to educate the family—but the result will hang more directly on the temperament ignited by the act of conception than on the truth of the precept. In all that is done to repress the spread of venereal contagion, more will depend on sanitary interference than on sermons and logic and lectures and pamphlets to the laity. In this circular cut and dried reference is made to the "importance of sexual health as a prerequisite to marriage." There is where even an arbitrary legal intervention would do much of its best work. If no prospective or actual husband was ever trapped by venereal infection, it is reasonable to expect that no wife will ever suffer in her own person because of that disease—the security turns wholly on the "IF." The contingency more generally hinges on whether or not the youth or the ante-nuptial candidate has at some time or in some emergency of experience by which he unexpectedly received a sting which could not be entirely extracted for years to come, and which would also infect the tisues and blood of inno-

cent wife and children. If that venture for sexual relief by the young man could have met a clean bill of fare instead of a foul one—even by the force of law—what a world of trial and mental tribulation would have been escaped. The fact of an innocent wife and a twain of innocent children being defended from a life scourge by the interposition of legalized authority over the woman who followed the service of the harlot, is of incomparable value above that of shielding a thousand inmates of the brothel from timely physical inspection, or being forcibly "laid off" in hospital at industrial employment till safely cured. Again, were some such process put into active practice it of itself would deter many girls and women from committing themselves to the pursuit of prostitution. Keep all public women sexually clean from infection, and there will be no more men inoculated with poison with which to perchance infect other women. Law for the public defence is the only solution of the dilemma—but how?

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PREVENTIVE METHODS IN MEDICINE.

BY J. HOWE ADAMS, M.D.

THE Chinese pay their doctors only when they are well. This would be good policy for more civilized nations, not that the doctor tries to keep his patients sick, but if he can see them frequently, he can check or ameliorate various baneful conditions. This plan modified to an extent has been adopted by the hard-working president of an accident insurance company. Breaking down from overwork, he has engaged his doctor to call on him every two weeks throughout the year, look him over, decide on his physical condition and whether he is working too hard.

While it is the province of the doctor more to care for the sick and cure disease and relieve suffering, yet he must know the best means of avoiding or destroying those causes which produce disease. In fact, Billings has placed such emphasis on hygiene that he has said the chief value of a prescription is often to methodize the mode of life of the patient and to remind at frequently recurring intervals the regimen which has been ordered with it. As the country grows more densely populated these problems increase.

According to the law of Flourens, the period of life of an animal is about five times that required to perfect the development of its skeleton and unite the epiphyses with the shafts of the long bones. This would make the life of man physiologically about one hundred years, yet David, the psalmist, said twenty-five hundred years ago: "The days of a man are three score years and ten, and if by reason of strength they be four score years, yet is their strength, labor and sorrow." No record of the duration of life in ancient Greece and Rome exists, but we know it is greater now than in the Middle Ages, for war and pestilence played great havoc.

Heredity does not play so great a rôle in the causation of disease as formerly. It is the growing belief that the tendency to disease is inherited rather than the actual seeds of the disease. Again, heredity is a matter in which the doctor is but little consulted at best. The propriety of a proposed marriage is rarely left to the physician unless for ulterior motives. There are three excellent rules to remember, however, in this connection: (1) No one in the temperate zones should marry under twenty years of age; (2) marriage between persons with the same tendency to disease should be avoided, especially if they be relatives: (3) persons with well-marked taints, such as syphilis, tuberculosis, etc., should not marry at any time. Unfortunately, however, the physician can only have a general influence; he has no actual power to prevent such unions.

Of all the preventable causes of disease, impure water falls most naturally under the doctor's care, especially in suburban and country towns. In a chemical sense, all water as found in nature is impure, for it contains inorganic salts and organic matter as well. The borderland between pure and impure water is hard to settle or define. The water supply should always be suspected where diarrhœal disease exists in a community, especially where the outbreaks are sudden and simultaneous. The presence of a specific germ is most difficult to determine, while on the other hand nitrogenous organic matter in decomposing form is dangerous, but it does not necessarily produce disease. Water impregnated with sewage, while revolting to the imagination, has been used without serious damage for a time. So the problem has various phases.

The chemistry of water analysis is not at all easy; in fact, it is a serious problem, far beyond the resources of the average physician. Yet the physician should be able to make a rough analysis on occasion. Water polluted with decaying organic matter generally has a bad odor which can be detected by filling a large bottle with the suspected water and shaking it well.

The danger of impure air, like that of impure water, is that it introduces into the system organic material which tends to disease production. As a rule the gaseous impurities in the air are offensive to the smell rather than actually dangerous, although certain gases can produce disease. The problem of ventilation falls under this category; it is a question that every physician should study carefully.

After all, the question of ventilation resolves itself into the problem of getting an adequate supply of pure air. But the test is often a severe one, for the impurities of the air are largely derived from the human body itself. These impurities are ammonia, sulphurretted hydrogen, carbonic acid and sulphide of ammonium. In adition there are various unstable organic compounds which are very prone to decomposition. For practical purposes, the degree of impurity is estimated by the amount of carbonic acid present in the air; this has led the public, and even the profession, to believe that carbonic acid is the only dangerous adulterant. This is not true, for carbonic acid is not injurious to health unless it is found in much greater proportion than is usual in habitations and halls. Its real value, however, depends on the fact that it is usually present in direct proportion to the amount of really dangerous impurities present. It is easy to estimate the amount of carbonic acid present, so that it serves as an index as to the organic matter.

We must adopt some standard of permissible

purity to determine whether a room is well ventilated. This standard is generally a condition of air which in a person of normal smell entering from the open air produces a faint odor musty and unpleasant. The air of such a room will show that the amount of carbonic acid present—that is, excess of this acid over the amount in external air—will be between two and three parts in ten thousand. Yet the amount of carbonic acid in normal air varies from two to five parts in ten thousand. Still it is well to adhere to the idea that the organic impurity of the air is not perceptible to the senses until the total carbonic acid rises to the proportion of six parts in ten thousand, as pointed out by Dr. Parkes. When it reaches nine parts the air is close, when it is above one in a thousand the air grows decidedly unpleasant.

Taking two parts in ten thousand as the permissible maximum of carbonic acid impurity, we find that the amount of fresh air which must be supplied for each person per hour is three thousand cubic feet. Pettenkofer takes three parts; here only two thousand cubic feet would be demanded. Either standard is an excellent one, although there is no definite knowledge that carbonic acid in larger amounts is actually harmful.

The problems now arise in ventilation as in any plan of ventilation, as follows: (1) What are the effects produced upon the inmates? (2) Are there unpleasant odors in the building? (3) What percentage of carbonic acid impurity is present? (4) What number of cubic feet are introduced and removed per hour? (5) What is the character of the fresh air supply as to purity? (6) Does it come from the cellar or other rooms or from a foul areaway? To test this latter point, use the fumes of nascent muriate of ammonia produced by exposing a cylinder of common blotting-paper moistened with dilute hydrochloric acid, applying it to the vapors coming from a crumpled fragment of the same paper moistened with common aqua ammonia placed within the cylinder. The process for carbonic acid determination is easy and can be learned in a short time, so it is not given here, space not permitting.

The basis of all plans for ventilation depends on the air supply. It is not enough to put in tubes or openings for the escape of foul air unless corresponding inlets are provided. Therefore it is all important to examine the flues, openings and ducts intended for the fresh air supply, studying their size and position in reference to the work they are intended to do. The correct size for flues and registers can be found for a given room by dividing the number of cubic feet of air to be supplied per second by the velocity in feet per second which the air is to have in the flue or opening, remembering it is well to err on the safe side by having shafts too large rather than too small. If the fresh air register is so placed that the aid is apt to strike the occupant of the room, the velocity of this current should not be more than one and a half feet per second. It will generally be found best that the velocity of the air in the flue shall not exceed six feet per second. It is better to calculate on the number of people to be supplied rather than the amount of cubic space.

Billings gives the following methods of calculation: "What should be the number and size of flues and registers for fresh air supply for a hospital ward to contain twenty-four beds, the ward being a rectangular pavilion, with windows on opposite sides? Here the room is occupied all the time, and the supply of air should be one cubic foot per head per second. This should be 24 cubic feet per second. The velocity of current at the registers should not exceed three feet per second, better only two. This requires from eight to twelve square feet of clear opening in the registers. If we place four on each side of the room, each register must have one square foot of clear opening at least; the air velocity should not exceed four feet per second, and therefore the area of each flue should be about nine by twelve inches. Take a schoolroom containing forty-eight pupils. Here the room as a rule is not occupied more than two hours at a time. The air supply, according to Billings, may be put down at thirty-five cubic feet per head per minute, or twenty-eight cubic feet per second for the whole. The velocity in the flues may be put down again at four feet for the whole, hence we need seven square feet area of flue or seven flues, each having one square foot of area. Billings does not believe that there are twenty schoolhouses in America which have fresh air flues of sufficient area; the deficiency being made up by leakage of the outer air through cracks around the windows and directly through the wall; also by the passage of air from the central hall into the room, coming primarily from the cellar. As a rule the velocity of the air in the foul air registers is greater than in the fresh air, since there is no danger of its causing draughts, and consequently there is no need of the outlets being larger than the inlets to allow for the expansion of heated air. On the contrary, if the outlets are too large, the foul air flues may work backwards and become inlets, hence this rule of making everything larger than is necessary is not a good working rule for outlets and chimney shafts.

But after all the merits of a plan of ventilation depends more on its method of distribution than on its volume. Chemical analysis of air from different parts of the room can be made, or the use of nascent muriate of ammonia will show the direction taken by the incoming air. Carbonic acid gas while heavier than air, does not sink to the floor, but, according to the law of diffusion of gas, is found equally diffused throughout the room.

Good ventilation is not cheap, unfortunately, and in a cold climate satisfactory heating, good ventilation and cheapness make a hard combination to supply. If it comes to a question between good heating and good ventilation in a cold climate, it is better to supply good heating.

The bad results of poor ventilation are not immediately seen at first, for the power of the human organism to adjust itself to surrounding circumstances is very great. Yet this power is deceptive, for such air will produce disease and shorten life. Phthisis, the great white plague, is the commonest disease of lack of air space and distribution. But other diseases are found in the respiratory tract, both acute and chronic in character.

The impurities due to sewer gas should be prevented absolutely and not left to ventilation. Ballard has suggested a good working rule in this connection as to the noxious quality of sewer gases; i. e., "it is that exposure to the offensive effluvia causes bodily discomfort or often functional disturbance, contin-

uing or recurring as the exposure continues or recurs, and tending by continuance or repetition to create an appreciable impairment of general health and strength, to render those exposed more liable than others to attacks of disease and more apt to suffer when attacked and in the more serious forms to the direct production of disease and the shortening of life."

The symptoms due to offensive effluvia are constant in character, as pointed out by Ballard. They consist of loss of appetite, nausea, headache, giddiness and adapts himself to the customs which the with diarrhœa and vomiting. But as a rule these symptoms are due also to overcrowding, poverty, collection of filth, etc. The law goes farther than medicine, for it has been decided in the case of Rex vs. White that "It is not necessary that the smell is unwholesome; it is enough if it renders the enjoyment of life uncomfortable."

The fourth element in preventative medicine is generally regarded as climate. Man adapts himself most readily to all extremes of climate, and if he exercises care he can do about as well in one climate as in another if he preserves his care and thoughtfulness and adapts himself to the cusoms which the inhabitants have learned to be good for themselves. It is hard to define climate, but it can be roughly classified as the "sum of meteorological influences, the most important of which, as regards health, are temperature, humidity and wind. This is too wide a question to discuss in this paper, beyond saying it is scarcely yet on a scientific basis.

We are told by the advertising agents of the various food products that we are what we eat. It is the general consensus of opinion that while the raw food in America is good, the cooking is bad. The frying pan, hot pies, soda bread, fried food swimming in grease, are all agents to shorten life. It is regarded as rather discreditable for a man to study his food; he is classed as a glutton or an epicure. This is unfortunate, for no more vital subject can be studied by a man. Another error is that disease is due largely to overeating and that abstemiousness means health. Flint in his excellent article on "Food in its Relation to Personal and Public Health," says (Billings): "Physiology, experience and common sense are alike opposed to these popular notions relating to food. Conditions for perfect health are first a sufficient appetite; second, the gratification of normal appetite before the want of food reaches the abnormal degree expressed by hunger; third, the satisfaction of the appetite by an adequate quantity of food. These conditions of health are fulfilled by compliance with instructive provisions for alimentation. But it will be asked, Is appetite infallible as a guide in dietetics? Following it as a guide, is food never taken beyond the requirements of health? I answer, It is a reliable guide under normal conditions. The inevitable circumstances of life are often not altogether normal, although producing no distinct morbid affection. Experience teaches, for example, that in a state of fatigue or exhaustion which is not a normal state, inconvenience may arise from the full gratification of appetite; that if unusual exertions mental or physical are to follow, a hearty meal may cause disturbance; and other examples may be added. Irrespective of abnormal or disturbing influences, if appetite be not infallible, it is at all events more reliable than a rule based on theoretical ideas, popular notions or purely physiological data. Moreover, it is not intended that the quantity of food should be accurately adjusted to the needs of the economy. To do this is impossible, and therefore it is necessary to elect between the risking of taking either too much or too little food. Which is to be preferred? Undoubtedly it is far better to incur the risk of taking too much than of taking too little. Nature provides for a redundancy, but has no provision against a persistent deficiency — *ex nihilo nihil fit.* As an ample supply of alimentary principles is indispensable to nutrition, and inasmuch as the supply cannot be made to contain precisely the needed amount of the different alimentary principles, we may say that a superabundance of food is a requirement to health.

"As in appetite we have a guide in respect of the times of taking food and the quantity to be taken, so taste is a guide in respect of the kinds of food required. The discrimination of food with reference to the wants of the system is the evident purpose of the sense of taste, and the enjoyment connected with this sense was designed to afford a security in addition to appetite for adequate alimentation.

A doctor should have a good general idea of cooking and a short course in the culinary laboratory would help him greatly. The well-known Mrs. Rorer has given many courses in medical schools.

The habitation is the last great division of this subject which we consider in this paper. The sanitary inspection of a house should include its site as well as the building itself. The main characteristics of the site are its dryness, the presence or absence of organic matter in the soil, and its porosity. Some soils contain thirty-three per cent. of air; in fact, all dry soils and rocks contain much more air than is commonly supposed.

Residence on a damp soil will produce diseases of the lungs, especially phthisis. The rise and fall of the soil water has been studied by Peltenkofer in typhoid fever. The subsoil water should be at least five feet below the foundations, yet this is often hard to obtain.

In a good system of house sewerage, all pipes and traps must be easily accessible for inspection for the following points: (1) Are all the pipes, joints and connections air-tight? (2) Is the soil-pipe well ventilated, or has it dead ends? (3) Is the communication between the soil-pipe and the street sewer uninterrupted? (4) Are the pipes properly trapped? (5) Is the water-supply of each closed entirely shut off from the main supply to the house by cistern or tank? In old houses it is hard to get this information, and it may require the services of a skilled mechanic to obtain access to the system. We cannot in our space go into details in this matter, beyond stating that the principal dangers to health from house sewerage are due, first, to the passage of air from the general system of sewers or from a cesspool into the house by the soil-pipe and its connections; second, to the generation of offensive and dangerous gases and organisms in the soil-pipe itself and the passage of these into the house; third, to leakage of soil-pipe causing contamination of the water-supply either by improper connections of water-pipes with water-closets or slop-hoppers or by contamination of

wells, cisterns or tanks with sewage or sewer gases (Billings).

The main points of a good system are the following:

1. All soil and waste pipes should be extended up to and through the roof, and be freely open at the top. The extension of the soil-pipe should be full size—i. e., from four to six inches in diameter.

2. There should be a fresh-air inlet in the house sewer just outside the house, and between this inlet and the main sewer should be a trap so arranged as to permit of inspection. This prevents the ventilation of sewers through the soil-pipes. If a perfect system of sewers, uniformity of house-connections, and uniform height of houses could be guaranteed, this inlet and trap would not be so necessary, although even then it would be useful.

3. Every water-closet, wash-bowl, bath-tub, sink etc., should have a trap placed as close to it as possible. This trap is desirable, whether the discharge be into the sewer system or not. For example, a kitchen sink, the pipe from which passes to the outer air and discharges there, should be trapped, for this pipe is foul, and if it be untrapped will act as an air-inlet.

4. The nearer to the soil-pipe that the fixtures can be arranged the better. It is especially desirable to avoid the necessity for long horizontal waste-pipes from stationary waste-bowls and from bath-tubs.

5. Bell traps, D traps, bottle traps, and mechanical traps are objectionable. The S trap is, upon the whole, the best, but it should be provided with a vent-pipe to prevent siphonage.

6. The best kind of water-closet for general use is probably some form of what are known as the wash-out closets. They are made in one piece of earthenware, have no machinery inside them, have a quantity of water in the basin into which the excreta drop, and do not require a separate trap beneath them. Each closet must, however, be carefully tested by itself: a very small warp or twist produced in the baking may so interfere with the siphonage as to make it practically worthess, and the basin cannot be altered or repaired. Where there are no children, and it is certain that the fixtures will be used with reasonable care, valve closets may be used.

7. Water-closets should always be flushed from a special tank provided for the purpose, and never direct from the main system of water-pipes. The flush must be large and rapid, and this requires a large supply-pipe, and for many forms of closets a flushing rim. Whatever be the form of closet, it should not be encased in a wooden box or closet, as is usually done, but it should stand freely exposed to light and air. Sanitarians commonly advise that water-closets should be located in outer walls and have an open window for ventilation. Such a position is usually impossible, and is not specially desirable in our climate. The room should be ventilated in such a way that the tendency of the air at the door shall always be from the house into it. This is to be effected by a shaft passing through the room, up and through the roof. It is well to have this shaft take its air supply from just behind the closet or from beneath the seat.

8. No overflow pipe from any cistern or tank except the one used for flushing water-closets should be connected with the soil pipe or sewer. Trapping such an overflow pipe does not prevent the danger.

9. Increase traps placed inside a house are of doubtful expediency. If they cannot be placed outside do not use them at all.

Remember that a cesspool beneath a dwelling or near its cellar walls is always dangerous, for it is practically impossible to prevent the passage of gases from it into the house. A cesspool is dangerous in the country, but in the city it should not be allowed to exist.

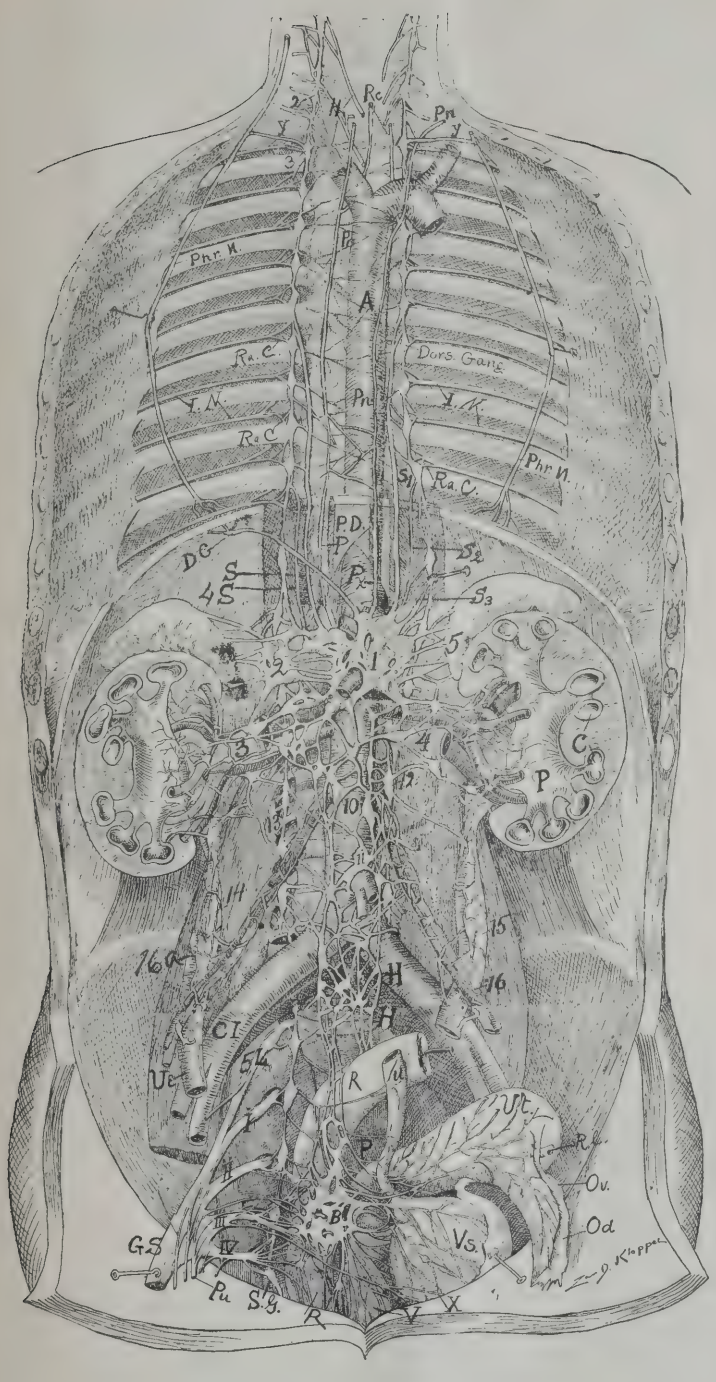
In closing I would state that I have drawn freely from the works of my old preceptor, Dr. John S. Billings, than whom there is no better authority.

PATHOLOGIC PHYSIOLOGY OF THE TRACTUS NERVOSUS (ABDOMINALIS).

BY BYRON ROBINSON, B.S., M.D., CHICAGO.

THE ideal nervous system consists of a ganglion cell, a conducting cord and a periphery, i. e., a receiver, a transmitter and a reorganizer. This simple view of the structure of the nervous system at once suggests its function, viz., that of reception (periphery apparatus—skin, mucosa), transmission (conducting apparatus—nerve cords), reorganization (ganglion cell—brain). The nervous apparatus is the highest and most perfect of known organism. Mental action or nerve force, the most subtle of all forces, depends on it. The nervous system includes the most profound secrets of life—it is the climax of organism. First and foremost the zone of the physiology of the tractus nervosus is not exactly defined—it is liberally elastic. Secondly, the pathologic physiology of the tractus nervosus possesses an expansive undefinable zone before established pathologic anatomy can be recognized. The pathologic physiology of tractus nervosus comprehends the fields of neuralgia, hyperæsthesia, anæsthesia, sensation, motion, melancholia, hysteria, neurasthenia, with innumerable irritable weaknesses of the nervous system. Absorption, secretion and peristalsis of viscera are the elements or means by which we recognize the pathologic physiology. In the numerous manifestations of symptoms of pathologic physiology of the tractus nervosus of the abdomen a few considerations may be suggestive and helpful in practice. First and foremost, many subjects are not perfect physically or mentally. Such subjects are prone to pathologic physiology. They possess inferior anatomy and physiology. Structure and function are of minimum perfection. Their nervous system is not stable. We should consider these defections or unstable conditions under long-employed or established terms, associated with which has grown a stately literature, as *stigma, habitus, asthenia congenita, heredity, predisposition, degeneracy.*

Nervous persons are afflicted with pathologic physiology. Nervous persons manifest a defective resistence. They are incapaciated for sustained effort. Nervous persons present premature exhaustion on persistent mental or physical effort. The reason of the nervousness is the anatomy and physiology of the tractus nervosus is inferior, its structure and function is deteriorated. Their nervous system is irritable, weak, defective, unstable, functioning much of the time with disorder and friction, like some watches, which maintain

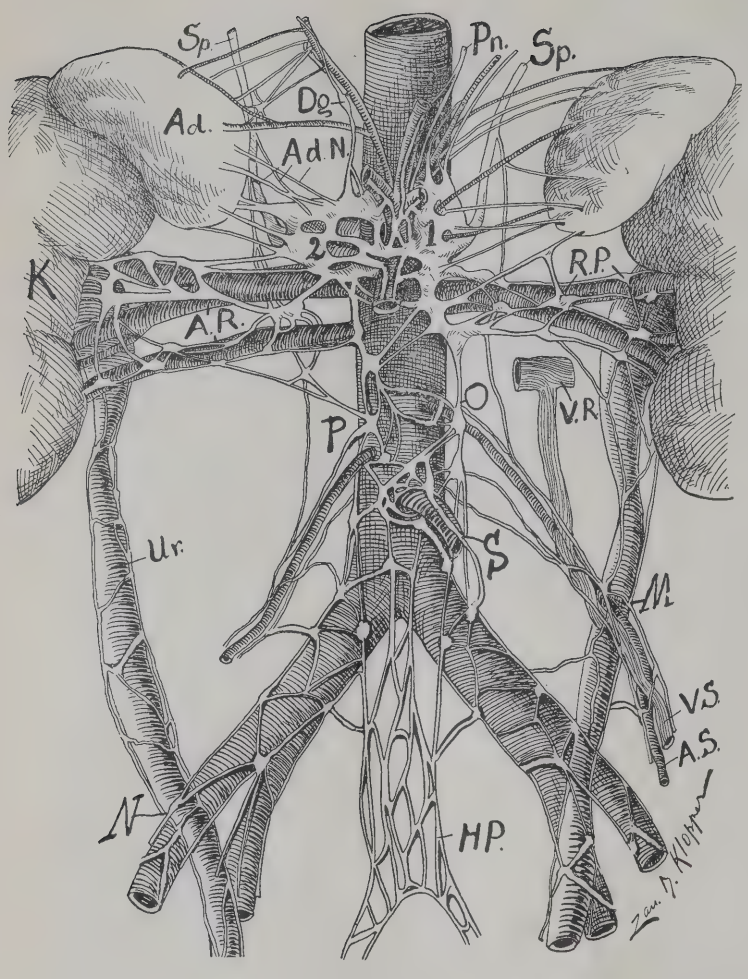


incorrect time. Nervous subjects are chiefly congenital unfortunates. They are born with defects, with stigma, a habitus, neuropathic predispositions—a condition which tends to degeneracy with facility. Nervousness, though frequently an announcement of an enfeebled nervous system, yet it may be evoked, aggravated by some irritation external to the nerve apparatus. Neurotic spells appear with as much mysticism as they disappear. The only trace is the memory of the disordered pathologic physiology. There is doubtless more or less foundation, for these inscrutable neurotic conditions, to be established in the state of the tractus vascularis, congestion, anæmia. The tone and tension of the abdominal muscles control the abdominal circulation. Diseases of the tractus intestinalis compromise the tractus nervosus by damaging its integrity—in structure and function.

One of the best terms to apply to subjects who are persistently afflicted with pathologic physiology is the word *habitus,* e. g., we have the habitus phthisicus, habitus splanchnopticus, habitus nervosus, habitus dyspepticus. The ensemble of symptoms associated with splanchnoptoxsia may well be termed habitus splanchnopticus. It is heredity in so far that the subject possesses a predisposition and the main defect is inferior anatomy and physiology. In the habitus splanchnopticus there is the gracile skeleton, the elongated flat thorax, extensive intercostal space, acute epigastric angle, the sacculated pendulous abdomen, limited muscularis and panniculus adiposus, the labored respiration. The costa fluctuans decima of B. Stiller, the peculiar habitus in form—presenting evident pathologic physiology. A marked factor in pathologic physiology of splanchnoptosia is the changed defective circulation, venous congestion. Generally, any subject with a "habitus" possesses an unstable nervous system. The dyspepsia accompanying the habitus splanchnopticus is perhaps more due to the neuropathic disposition than to the splanchnoptosia, hence the terms dyspepsia nervosa, or stigma dyspepticum. The habitus neurasthenicus presents pathologic physiology of the tractus nervosus—a condition of exhaustion or weakness of the nervous system, accompanied by physical and mental efficiency. ¡Habitus neurasthenicus is a fatigue disease of the nervous system. It is characterized by the presence of motor, sensory, psychic and visceral symptoms—all fatigued, tired, exhausted. This habitus is especially characterized by weakness, or inefficiency and irritability of the tractus nervosus. The physician can detect spots of hyperæsthesia,' spinal irritation, fatigue of the special sense, auditory and retinal hyperæsthesia—all pathologic physiology, no pathologic anatomy. However, if pathologic anatomy exists in the body it is liable to intensify the pathologic physiology, the subject of habitus neurasthenicus, precipitating storms of neurotic spells. The physician can detect the pathologic physiologoy, but not pathologic anatomy. The subject is afflicted more or less throughout life with pathologic physiology. When such subjects maintain additional strains as gestation and the care of growing children, pathologic physiology in the tractus urinarius becomes pronounced and frequent, e. g., the habitus neurasthenicus may be in abeyance, quiescent for a long period of time when the entrance of a pelvic disease, a myometritis, salpingitis, pelvic peritonitis, bay initiate, aggravate an intense neurotic state. It is not due merely to the so-called reflexes, but because the habitus neurasthenicus, the weak, irritable nervous system has been aggravated, traumatized, become unbalanced, exhausted, fatigued. Its inherent vital power is deficient and readily passes into a state of pathologic physiology.

A lesson right here may be pointed that surgeons should operate for surgical indications only, not for function indications. First and foremost, the gynecologist must learn to decide by an analytic exclusion diagnosis whether the subject has a habitus neurasthenicus, a pelvic disease, or the two combined. The test of a gynecologist is his ability to diagnose the disease—not to do an operation.

The exquisitely, finely balanced nervous system of woman makes it liable to imperfections of development —stigmata. Such a perfect organism as the tractus nervosus is prone to disease. The intimate and profound relation of the tractus nervosus to the tractus



genitalis in woman demands that a gynecologist be a physician of comprehension, or knowledge, understanding the vast fields of the tractus nervosus and tractus genitalis, as well as their profound relation.

The indiscreet and general surgeon announces that gynecology is "passing," and has become a segment of general surgery. This assertion presents limited comprehension. Is the oculist and aurist passing? Is the dermatologist, neurologist and laryngologist passing? Among the Germans, the most profoundly learned in medicine, specialists are progressively increasing. The fact is that legitimate gynecology, like all other specialties, is just beginning. Gynecology to-day is practically as broad as the entire medical field of thirty years ago. The gynecologist must comprehend not only the organs in his own special field (tractus genitalis), but also the adjacent organs involved in practice or stimulating gynecological disease, as the tractus intestinalis, tractus nervosus, and tractus urinarius. In the interest of the patient, no specialist can be limited exactly to the organs of his own specialty, for he should study the organs secondarily afflicted or dependent on the affections of the viscera on which he practices. The specialist must understand the anatomic and pathologic relations of specialized organs to adjacent territories, as vomiting (tractus intestinalis) to pregnancy (tractus genitalis), as albumin (tractus urinarius) to pregnancy (tractus genitalis).

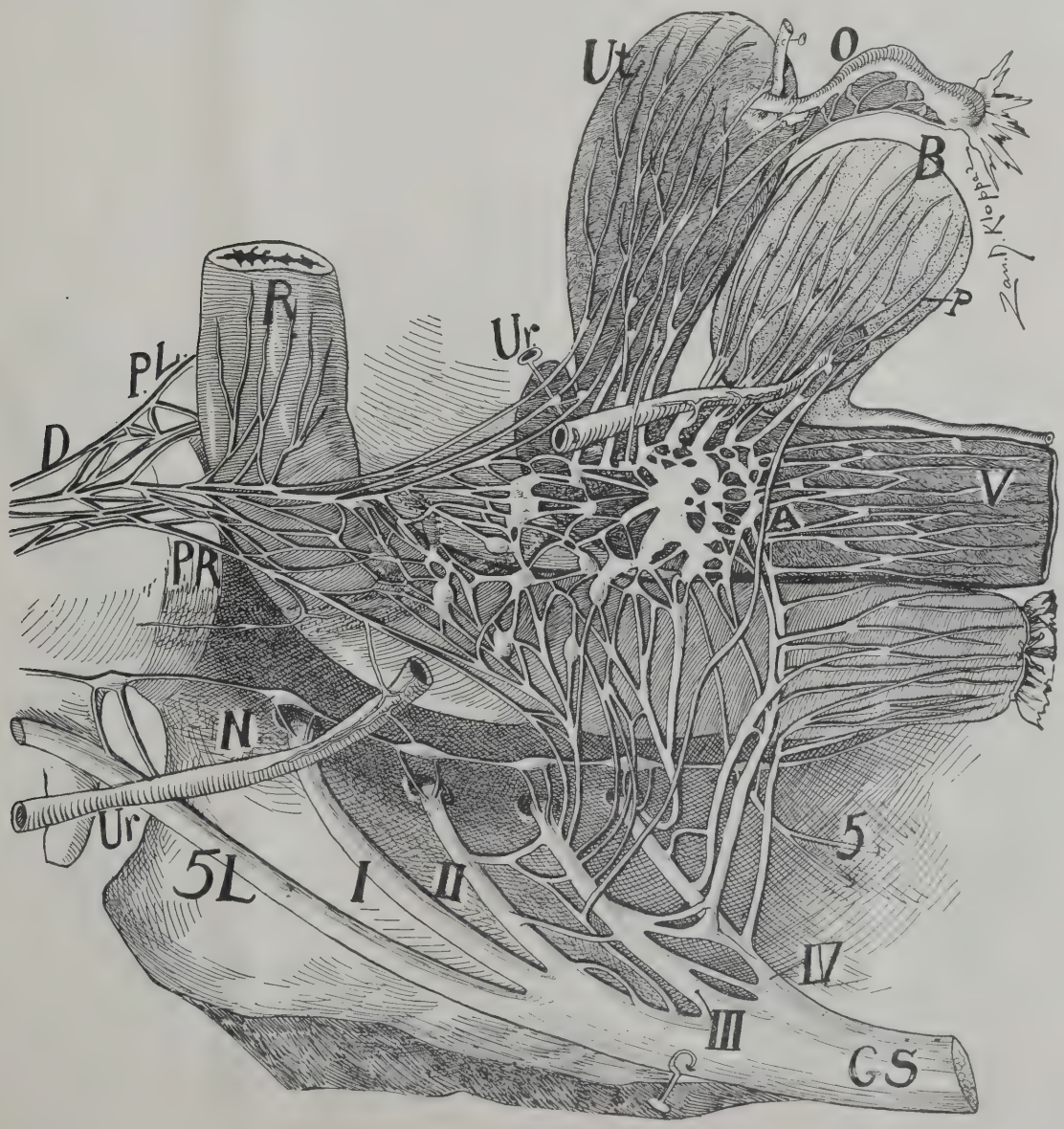
The more intimate changing relations of associated organs in structure and function the more valuable will be the study of the differential diagnosis in disease. The gynecologist should execute all necessary technique which will enable him to diagnose and treat diseases, dependent associated with the tractus genitalis—as cystititis, urenteritis, splanchnoptosia, mammary disease, constipation, nephritis, proctitis, thyroid disease. The borders of a specialty cannot be marked by the rim of a circle, but by the diseases dependent on and resulting from the specialized system of viscera. Every special science gradually unfolds its own dependent and associated relations.

Gynecology has been a typical example. It forced a divorce from general surgery, to which it never will return, from sheer magnitude. One mind cannot master more than one visceral tract with its relations. The unfolding of gynecology has increased the interest and usefulness of its domain. It has shown the delicate balance and relations of all abdominal viscera on the abdominal sympathetic brain. Practically all progress, new ideas, must come from specialists. The specialist is a permanent factor in medical progress, from whom will practically emanate discoveries and rational treatment. However, the present and future specialist is and will not be limited to single visceral tractus for their diagnosis and therapy of his independent field, but will study adjacent or remote visceral tracts which may lend aid in the differential diagnosis and rational treatment. The gynecologist should diagnose and treat all diseases primarily or secondarily dependent on the life, function and pathologic conditions of the tractus genitalis, as sacropubic hernia, rectocele, vesicocele, splanchnoptosia dependent on rapid and frequent gestations (nephroptosia, gastroptosia, coloptosia, hepaptosia—relaxed abdominal walls). The rock and base of medical practice (special or general) is the diagnosis which enables the physician to employ rational treatment, to act for the best interest of the patient. Large numbers of women with marked splanchnoptosia, dependent on the work performed by the tractus genitalis, as gestations, come to the gynecologist. The tractus genitalis, though primarily the basic cause of splanchnoptosia, itself is no more ill than the tractus urinarius, tractus intestinalis, or the relaxed abdominal walls. It is the duty of the gynecologist to treat such cases. The general surgeon is no more an expert in special departments than is the general practitioner. The reason for the operation, i. e., the diagnosis, is a thousand fold more expert than the mere technique of surgical procedure. *Predisposing* factors to pathologic physiology in the tractus nervosus are defective nutrition, variations of metabolism, chlorosis, anæmia, hæmorrhages, deficient or excessive secretion, premature senescence, strained physical and mental efforts. Heredity transmits defects which are the foundation for agravated pathologic physiology. When the subject has an established habitus as habitus splanchnopticus, habitus neurasthenicus, habitus phthisicus and predisposing factors become imposed to the subject is burdened with extreme pathologic physiology. An excellent example of artificial habitus is the numerous stigmata arising from the total removal of ovaries in young women, which condition might be termed habitus ovaricæ neurasthenicus. The young woman with castrated ovaries experiences an intense, aggravated, premature climacterium—she is suffering from pathologic physiology of the tractus nervosus. The patient is afflicted with flushing (disturbed circulatory centre), flashes (disturbance of caloric centre), perspiration (disturbance of the perspiratory centre). She has depression, melancholia, excessive panniculus adiposes,

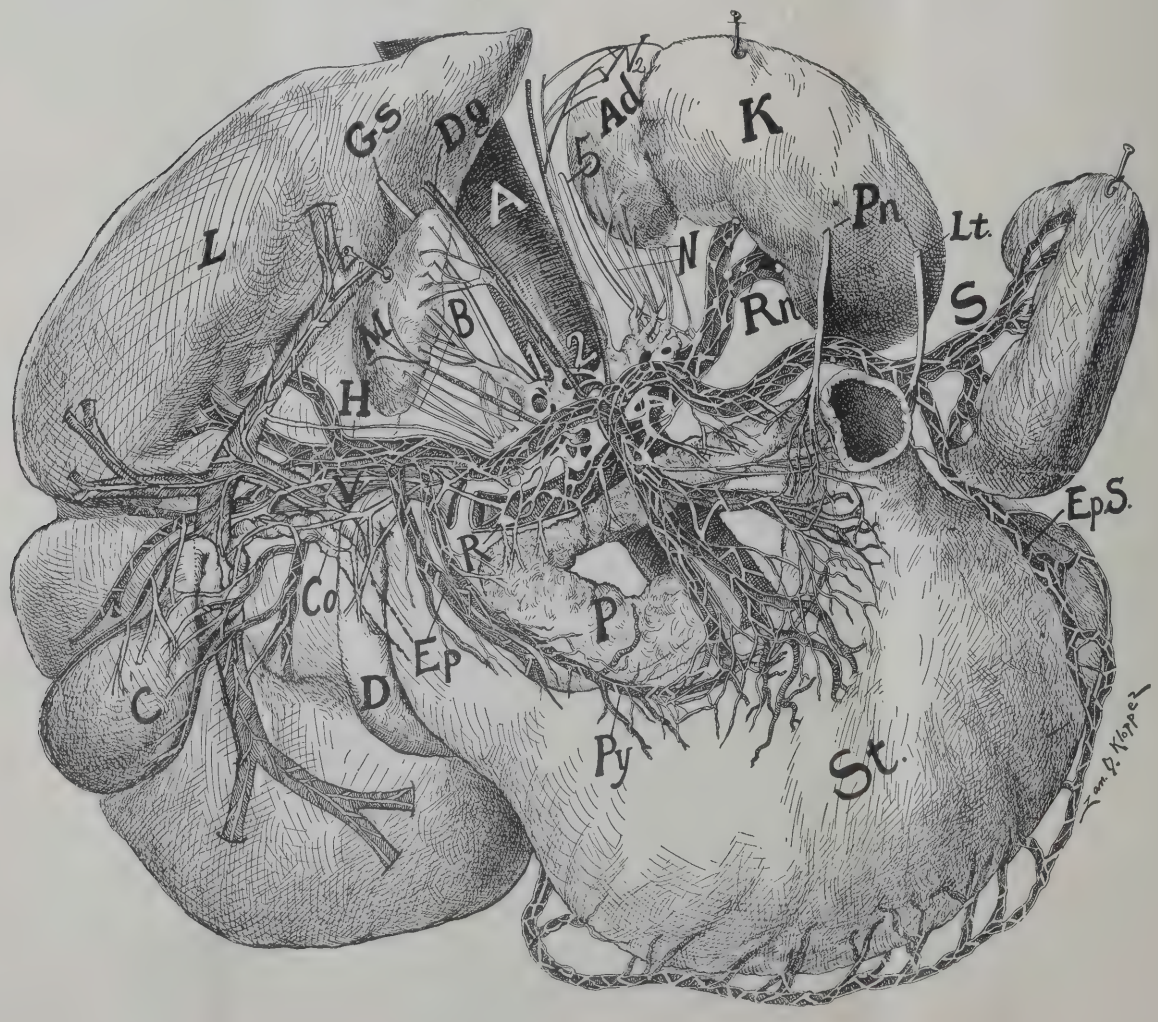
growths of hair. In some subjects the sensation of the tractus nervosus of the abdomen is awry. Subjects complain of animals crawling within the abdomen. This matter may be explained by supersensitiveness or hyperæsthesia of the mucosa of the tractus intestinalis from gas or contents. More than one operation has been performed for such condition. It may be incidentally remarked that it requires much study and discreet judgment to decide neurosis of the tractus nervosus abdominalis and the nervous disturbances produced by the dominating nerve supplied genital tract—both conditions induce aggravate pathologic physiology in the abdominal nerves, e. g., one of the most characteristic lesions, accompanying the habitus neurasthenicus—producing pathologic physiology—is defective development of the tractus genitalis. I think among the scores of women I have examined with defective development of the genitals that at least 95 per cent. were neurotics manifesting pathologic physiology of the tractus nervosus. Does the neurosis precede (congenital), accompany the defective development of the genitals or is it accidental to it? The most probable view is that it is congenital, and marks an ill development of the organism. The habitus neurasthenicus or habitus hysterics are not disease of the genitals but of the nervous system with an hereditary burden and perhaps an acquired burden. These conditions required vast study to differentiate in gynecologic practice. The habitus chlorosis is another example of a disease closely associated with the tractus genitalis. It is doubtless heredity, occurs in girls from fourteen to twenty-four years of age, i. e., at puberty or the developmental stage, is accompanied by increased panniculus adiposus and neurotic symptoms. Chlorosis is associated with defective development of the genitals in 75 per cent. of subjects. Genital functions are defective. The nerves governing secretion (ovarian) are perhaps defective. In diagnosing pathologic physiology of the abdominal nervous system it is well to determine the ætiology as acquired factors enhance conditions, e. g., the tractus nervosus of a pregnant woman is more irritable, more liable to pathologic physiology than the non-pregnant. The nursing woman is frequently in a state of pathologic physiology.

TREATMENT OF PATHOLOGIC PHYSIOLOGY OF THE TRACTUS NERVOSUS.

The treatment of subjects with disturbances—pathologic physiology—in the abdominal nerves is difficult in



ordinary practice because the acquired factors are inseparably associated with continuous environments, with habitat. The ætiology and consequent habitus or stigma must be diagnosed by careful examination in individual subjects. The reason the sanatorium is so successful in the treatment of the nervous patients is the patient is removed from the environments, from the habitat, in which the disease developed. The provocative or aggravating factors must be generally eliminated. It may be constipation, deficient drinking of fluids, the ingesting of improper concentrated foods, which leave insufficient indigestible residue to provoke intestinal peristalsis. It may be sedentary habits, insufficient exercise or deficient fresh air. It may be excessive work and worry, insomnia. In the subject with the habitus neurasthenicus I am in general opposed to the so-called Mitchell rest cure. The neurasthenic may possess fatigued nerves but not fatigued muscles. I attempt to treat the neurasthenic by maintaining her in the fresh air and muscular activity all day. In the subjects I administer active visceral drainage and coarse foods which leave a large undigestible residue. She is improved by the bicycle, by games requiring muscular activity, rides which massage the viscera, fresh air, appropriate diet, and ample fluid at regular intervals. Some neurasthenics are practically unmanageable. I am now treating a woman twenty-seven years of age who has lain in bed for three years. She says her nerves could not stand walking in the sunshine. Physically I can detect no pathologic anatomy—simply pathologic physiology. By forced feeding she retains ample flesh. During the last six months, by all kinds of persuasion, we succeeded in inducing her to walk one block daily. Maximum visceral drainage and appropriate dietetics maintains apparently a healthy physique. We agree with Dr. John G. Clark that several kinds of neurasthenics exist. The gynecologist meets with three kinds of neurasthenics, viz., (a) a neurasthenic of congenital origin—habitus neurasthenicus congenita—who practice almost continually genital introspection where the physicians can not detect genital pathologic anatomy. She is constantly occupied by views regarding genital and sexual life. The treatment of such neuropathic subjects is lifelong, firm discipline, hygiene, dietetic, fresh air for twenty-four hours a day, ample fluids, physical exercise. (b) A neurasthenic with coincident visceral lesion but each entirely independent of the other as may occur in the tractus genitalis, tractus intestinalis, tractus urinarius. In the second condition the additional treatment is to remove the lesions of the soul visceral tract; (c) a third kind of neurasthenic is where the neurasthenia is dependent on an organic, visceral lesion. The tractus nervosus of the originally predisposed, neuropathic subject was provoked, aggravated into a state of pathologic physiology by the organic lesion. The treatment of this third class is repair of the organic lesion and systematic visceral drainage by means of fluids and foods.



1. *Dietetic.* The diet of neurotic patients should be regulated under strict discipline. It should consist of cereals, vegetables, albuminates (egg, milk), and limited meals—mixed diet. The high spices, cakes, puddings, pies, stimulants should be eliminated.

2. *Fluids.* Ample at regular intervals—8 ounces every two hours for at least six times daily. This forty-eight ounces of fluids daily may be nourishing fluid—as, milk, buttermilk, eggnog, cereal gruels.

3. *Salt rubs,* which the patient administers to herself once or twice daily, at stated times for stated duration.

4. *Massage,* which should be administered as much as possible by the patient herself. The patient can be taught massage of the abdominal muscles, which especially benefits the abnominal visceral tracts.

5. *Exercise* is absolutely necessary for health. The neurotic patient continually complains of tiredness and fatigue. The fatigue belongs to the nerves. It is not muscle fatigue, hence the muscular activity should be vigorously maintained in walking, riding, games—all distracting the patient's attention from herself. Muscular exercise influences circulation and hence nourishment.

6. *Fresh air* should be continuous day and night. The sleeping-window should be open all night. The window of the day-room should be continuously open. Cold, fresh air is an invaluable therapeutic agent in neurasthenic disturbances and tuberculoses.

In order to assist the foods and fluids to secure maximum visceral drainage I place on the tongue every two hours a tablet containing 3 grains of sodium chloride (NaCl) and a part or multiple of an alkaline tablet [composed of aloes (1-3 gr.), cascara sagrada (1-40 gr.), $NaHCO_3$ (1 gr.), $KHCO_3$ (1-8 gr.), and $MgSO_4$ (2 gr),] followed by 8 ounces of fluid. This visceral drainage method I follow systematically for weeks and months, resulting in successful maximum, visceral drainage, with increased nourishment, improved sleep. The elimination of waste-laden products benefits the nervous system—the pathologic physiology is reduced to a minimum and the patient recovers.

SURGERY OF THE BLADDER.

BY J. LEE FOWLER, M.D.

Part II.

There are four varieties of exstrophy of the bladder, only one of which is common: (1) Ectopia of the bladder without division of its walls. (2) Superior vesical fissure. (3) Inferior vesical fissure. (4) Complete extroversion. The one case on record of the first is that related by Gusserow, of prolapse of the bladder through the patent urachus; the second and third varieties are also excessively rare. The usual appearance of the fourth variety is well known. Keibel believes that the ventral wall in the subumbilical region is formed by the so-called anal membrane, which constitutes at the same time the anterior wall of the cloaca in which the bladder is about to develop, so that here the bladder and abdominal walls have a common origin. The anal membrane is nothing but the most posterior reflected portion of the primitive streak, and Keibel believes that the dehiscence results from a continuation on to the streak of the primitive furrow. Deformities constantly accompanying exstrophy of the bladder are epispadias and absence of the symphsis pubis. The pubic bones may approach within 2 or 3 centimetres or may be distant as much as 4½ inches from one another. Other rather common concomitant deformities are ectopia testis and absence of the prostate. Occasionally the intestine opens through the posterior bladder wall, with congenital absence of the rectum. Surgeons have discussed various operations: (1) Methods of procedure in which the bladder is preserved and closed by plastic operations. (2) Methods in which the bladder is sacrificed, and the ureters are brought into the vicinity of a closed urethra or into the vagina. (3) Methods in which the bladder is sacrificed and the urine diverted into the lower bowel.

The auto plastic methods of Thiersch and Wood have the disadvantages that owing to the growth of hair the wall tends to become covered with phosphates; that the new bladder is not continent; that usually many operations are necessary and failures frequent. The plan of directly suturing the margins of the bladder, first proposed by Gerdy, has been elaborated by Czerny, Mikulicz, Rydygier, Walsham, and others. Czerny loosens the bladder from all its attachments until it is adherent at its base only, and then sutured the edges together, while Mikulicz carries the incisions for freeing the bladder down to the transversalis fascia, along the outer border of the recti, to include the attachments of these muscles either alone or along with a portion of the os pubis.

There are other procedures to be considered: (a) Methods which aim at the approximation of the ossa pubis; (b) methods which devote special attention to the attempt to restore the sphincter vesicæ. Of the first, Trendelenberg's is the oldest osteotomy through the sacro iliac joints; in 1896 König suggested division of the horizontal and descending rami of the pubes, and displacement inwards of the portions thus loosened. In 1897 Koch substituted osteoclasis for osteotomy of the sacro iliac junction. Of the second, Kuster incised the penis inferiorly, separated the corpora cavernosa, and after freshening the edges of the dorsal furrow, sutured the corpora cavernosa over the channel of mucous membrane thus made. The lateral incisions through which the mucous membrane was freed were carried along the bladder wall, and a separate suture of the mucous membrance and of the muscular wall made here. To increase the amount of mucous membrane available for forming the new bladder Rutkowski opened the abdomen and brought out a coil of ilium; from this he cut a segment, and after uniting the cut ends and restoring the continuity of the gut, opened the isolated piece longitudinally and thus obtained a quadrilateral flap. The bladder was then detached and the intestinal flap sutured into defect. The abdominal wall was closed over all. Mikulica operated in the same way, but did not complete the procedure at one sitting. He used 12 cm. of the lower ilium. He had found, during the course of experiments on dogs, that if he isolated portions of intestine a certain number of such portions atrophied after a time. He left the isolated portion within the peritoneal cavity for some seven months before proceeding to use it to augment the vesical mucous membrane. Mundel suggested the transplantation of sheep's bladder, carrying out his suggestion experimentally on a dog. He placed the flap obtained in between the superficial and deep fascia of the abdominal wall, the

mucous membrane downward and protected from forming adhesions to the deep fascia by a sheet of gold foil; the other face of the flap becomes attached to the superficial fascia and skin, and after this attachment is firm a flap of skin thus lined is separated up and swung over into position over the front of the extruded bladder. The direct suture of the bladder wall is in every way preferable to the covering with skin flaps, and avoids the dangers of incrustation and cystitis. A receptacle can be satisfactorily formed by Czerny's or Mikulicz's method. Also, Rutkowski and Mikulicz have shown that it is possible to increase the capacity of a bladder deficient in this respect, and Mundel's suggested procedure would appear to be capable of obtaining the same result at less risk to life. If, therefore, it is possible to make the receptacle continent, the total result would be in every way satisisfactory, but the cases in which this desideratum has been obtained are very few. If any sphincteric action is to be obtained it must be striven after (a) relief of all lateral tension, and approximation of the ossa pubis; and (b) a careful dissection and apposition of the structures at the base of the penis Kuster Poppert. If a sphincter can be constructed the methods of direct suture of the vesical walls, possibly after increase of the vesical capacity, furnish means of obtaining a useful bladder. With regard to the existence of material out of which a sphincter may be fashioned there is little anatomical evidence. Methods in which the bladder is sacrificed as a receptacle and the urine conducted to the urethra are represented by those of Sonnenberg and of Segond. They have been adopted by those who think it impossible to make a satisfactory continent bladder by any of the above recorded methods, and who are unwilling to run the risks involved in the conveying of the urine to the bowel. Sonnenberg extirpates the mucous membrane of the bladder, and sutures the ureteral orifices in position at the base of the urethra. Segond uses the bladder mucous membrane to cover in the epispadias, dissecting a broad flap with its base at the trigone and folding it over from above downwards. The objects attained by these methods are the removal or covering in of the exposed mucous membrane and the facilitating the adaptation of a receptacle for the urine. Sonnenberg has operated on seven cases without a fatal result; he considers the method preferable to others in that the formation of a bladder is useless if there is no continence, and in that the amount of mucous membrane for the formation of a bladder of satisfactory capacity is as a rule quite insufficient; on the other hand, he emphasizes the danger of pyelonephritis when the urine is carried into the bowel. Methods in which the urine is diverted into the bowel comprise: (a) Dissection of the ureters and implantation into the sigmoid flexure or rectum; (b) dissection of the ureters, together with a portion of the vesical mucous membrane and implantation of the whole into the sigmoid flexure or rectum; (c) formation of the vesico rectal fistula. The first method was attended with a very high mortality, and has in consequence been abandoned in favor of the second and third.

Maydl separated the ureteral extremities together with the mucous membrane between and immediately around them, and the fixation of this to the edges of a longitudinal wound made for the purpose in the sigmoid flexure; others have planted the flap into the rectum. Maydl in a recent communication expresses disapproval of the rectal implantation, and also of any attempt to separate the ureters without the portion of attached bladder wall. The results of this procedure in successful cases have been satisfactory, in so far as it has been shown that the rectum is capable of retaining urine for a period of several hours and voiding it under voluntary control. The mortality has been due primarily to shock, and secondarily to ascending ureteritis and pyolonephritis. The latter was responsible for an excessively high mortality when the ureters were directly planted into the bowel; but Maydl's method has very largely reduced this. Illustrative cases are reported as follows: Frank reports a case in which the urine could be held for five hours, and during the night sleep was undisturbed; health was perfect. Mazel has related two cases successfully operated on by Wolfer, and refers to fourteen others (with twelve successes) during the six previous years. Hartley relates the case of a child, aged three and a half, where he implanted into the rectum; the urine was passed every four hours during the day and once during the night, the child asking for a vessel. Of forty cases operated on by Maydl's method twenty-one were reported well at one year, ten at two years, seven at three years, and one at seven years, but in spite of Maydl's disapproval of rectal implantation many successful cases have been recorded. Petersen has shown how much less the mortality of Maydl's procedure has proved than that following the axial implantation of the ureters; he believes that Frank's method of vesico rectal anastomosis will probably still further reduce the mortality. It has now been established: (1) That by diverting the urine into the lower bowel continence for an average period of between three and four hours can be obtained. (2) That the mortality of this procedure is much reduced by preserving the ureteral orifices intact, later operators showing one of about 14 per cent. (3) That plastic method in which the bladder is preserved have so far failed in the great majority of instances to fashion a continent receptacle. (4) That if by some procedure such a continent bladder can be obtained the plastic methods available are capable of providing one otherwise quite satisfactory. (5) That if the methods of diverting the urine appear to be contraindicated in any case, and it is considered useless to attempt to obtain a continent bladder, the extirpation of the bladder wall and the approximation of the ureters to the urethra facilitate the satisfactory wearing of a urinal.

In experiments on animals with a view to ascertaining if it were possible to transplant the bladder of one animal into the body of another, Mundell was successful in implanting a piece of the bladder wall of one dog into the abdominal wall of another, interposing it between the superficial and deep layers of the superficial fascia, and laying a sheet of gold foil between the mucous membrane of the bladder wall graft and the deep layer of the fascia to prevent union of this surface. He proposes to use the bladder wall of a sheep in like manner in a case of ectopia vesicæ, and when the graft is united to form a flap composed of the skin and superficial layer of fascia and sheep's bladder graft, to create an anterior wall for the bladder; in this way the surface exposed to the urine would consist of mucous membrane.

Douglas contributed a paper on the bacillus coli

communis in cystitis, based on work done in the Royal College of Physicians' Laboratory, Edinburgh. The seventeen male patients examined fall into three groups: The first group, of four cases, had alkaline and ammoniacal urine; of these, three contained a pure culture of staphylococcus, and one a mild culture of staphylococcus, streptococcus, and then colon bacillus. Two of these cases had cystitis secondary to calculus, and two cystitis due to catheterization. The second group consisted of three cases of prostratic enlargement without decided evidence of cystitis. All three cases yielded pure cultures of the bacillus coli communis. In these cases the distinguishing character was the abundance of bacterial growth and the sparse occurrence of leucocytes, and they might fairly enough be termed cases of bacteriuria. The third group included eight well-defined cases of cystitis with acid urine, and without disease of the prostate or any history of infection from instruments.

His conclusions are as follows: (1) The bacillus coli communis is met with in the great bulk of cases of cystitis, and in many is apparently the determining cause of the disease. (2) In certain cases the organism is abundantly present during long periods in the bladder under favoring conditions, but without causing cystitis. (3) Certain of the facts lend support to the view that often the bacillus is a supplanter of other forms, rather than the initiating cause of the disease. (4) The marked polymorphism and varying pathogenicity of the organism would account for the conflicting opinions held regarding its identity, and its rôle in cystitis, and the confusion in nomeclature until recently prevailing. (5) No one culture reaction enables the organism to be recognized with certainty, but cultivation on several media is needful.

General tonic and strengthening treatment is of the highest importance in tuberculosis of the bladder. Of the drugs for internal use creosote and guaiacal carbonate appear to give the best results, though positive conclusions are hard to draw. Careful irrigation may do much good, and in isolated cases may even effect a cure, but the irrigations should be very small in amount and never carried to the point of the least distension. Lactic acid (up to 20 per cent.) and bichloride solutions (1 in 10,000 to 1 in 1,000) give the best results, but both are painful, the former being especially so. Operative treatment should only be resorted to when the disease is localized to small areas.

Contrary to the belief of the majority of American surgeons, Guyon and Michon published some years ago a series of cases to prove that continuous catheterization was the safest and most successful treatment for urinary infection attended with fever, and recently Guyon again insists upon the value of this method. These cases include the last stage of prostatic enlargement, which are usually regarded as hopeless. Guyon reduces his mortality to 20 per cent. by this method. Suprapubic drainage, he claims, is attended with a mortality of over 36 per cent. In over 50 per cent. of his recent cases defervescence took place in the first three days. Christian is also an advocate of this method of drainage of the bladder, and has recorded several cases to show its value.

Harrison gives an interesting report of one hundred and ten cases of operation for stone performed between 1890 and 1897. The operations were: Litholapaxy, one hundred and one; perineal lithotrity, three; suprapubic lithotomy, three, and median lithotomy, four. Death followed the operation of litholapaxy in six cases, and was due to the following causes: Suppurative nephritis, four cases; pelvic cellulitis, probably from a vesical pouch, one case; senile decay, one case. In the cases of suppurative nephritis, the first was a man of sixty-five years, on whom a similar operation had been successfully performed thirteen months before, and the second operation was probably too long delayed; the second, a man, aged sixty years, died on the twenty-eighth day of chronic suppurative nephritis and syncope. In the remaining two cases there was urethral stricture of long standing, and in one of these the author believes that perineal lithotomy and bladder drainage would have given a better result. Besides these two fatal cases stricture of the urethra was a complication in six other patients. In itself stricture is no obstacle to litholapaxy, but when it is of such tightness and duration that suppurative nephritis is imminent or actually present, this operation will be practiced under grave risks, and perineal lithotrity, with division of the stricture and subsequent drainage, is far safer. In the one hundred and one cases of litholapaxy recurrence of the stone necessitated further interference in twenty-three. In these cases the operation was repeated once in thirteen, twice in two, thrice in one, four in one, five times in one, six times in one, nine times in two, and ten times in two. Many of these secondary operations were slight, and as they were mostly performed in old men with atonic bladders and the intervening health was good, a cutting operation was not to be recommended. Recurrence of stone after crushing is only of importance in cases tions. In the child or young adult it is very rare, and only once in this series did it occur, and then was probably a fresh stone from the kidney. All the remaining cases of recurrence were associated with this form of urinary obstruction. The explanation is simple, for complete emptying of the bladder becomes impossible, and stones descending from the kidneys are retained, and in the same way other foreign bodies, such as shreds and sloughs from an inflamed bladder form nuclei for the formation of stones, while on more than one occasion a recurring calculus takes origin on the cicatrix of a suprapubic cystotomy wound, or the remains of silk sutures used in this operation. Incomplete removal of débris after crushing does not lead to recurrence so often as some authorities consider. In cases of enlarged prostate, however, the sacs and pouches in the bladder wall are inaccessible hiding places for such débris. To prevent recurrence of the stones, thoroughly clear the bladder in the first instance, watch the subsequent management of the case, and use measures which aim at causing shrinkage or atrophy of the enlarged gland. Harrison insists upon the importance of washing out the bladder once a week with the metal catheter and aspirator for three or four months after operation in cases of enlarged prostate and atonic bladders. Some silver salt has a beneficial effect on these cases of prostatic hypertrophy with chronic cystitis when there is a tendency to the formation of phosphatic concretions. Vasectomy, with a view to causing atrophy of the enlarged gland, was performed in six cases, and seemed beneficial in

facilitating the passage of instruments and allowing freer micturation, and thus getting rid of the slimy mucous. In none of these cases has recurrence of the stone taken place. The other operations performed were not preferred on account of the stone, but for some complication present. Thus perineal lithotrity was performed in three cases on account of an extremely contracted and thickened bladder, a rigid fibrous prostate and a frequently operated urethral stricture respectively. Suprapubic cystotomy was performed twice, and in both cases the operation was in the main an exploratory one. Harrison does not favor this method of removing large calculi from elderly males.

THE SEX PROBLEM.

BY WILLIAM COLBY COOPER, M.D.

THE sex question—where is the bottom of it? The towering, whelming probability is that it has no bottom any more than has the cosmic ultimate. There is two of sex—eternally *two* of it. This contradicts monistic finality, but what does not, since all possibility depends on action and reaction? *Betweenness* is the last fact. The oneness resulting from sex relationship is still betweenness. This is necessarily true because the sex fact depends on complemental assurance. Only out of active and reactive assertiveness is self-verity realizable. The essentialness of betweenness in all fact is familiarly illustrated in the impossibility of "self-control."* What plausible and glittering impossible moral certitudes have fallen out of the inchoate consciousness of the inevitable homilist in relation to "self-control!" *A* may control *B*, but how shall he control himself, there being but one of him? Shall he transcend himself—otherwise, shall he lift himself by the boot straps? The feat is nullified by the lack of betweenness. But the irrepressible homilist, forever accepting himself (*i. e.*, accepting his consequent double) seriously, will go on twittering sweet platitudes anent "self-control." For what shall disperse the vanities and rupture the smugness of the professional moralist? After all, though, if the homilist should take on over-nicety and always take the trouble to explain that "self-control" is inexorably, inexcusably, ineluctably and forever environal control, would much be gained by it? I suspect not.

Betweenness, then, is the essence of sex, as it is of everything else. I should not call the male fact positive and the female fact negative, neither would I reverse the order. The fact is, there is no *negative* in the universe. In the proximate, and for technical reasons, the word is handy one, that's all. To negative would be to nothingize and there is no *nothing*. In relation to "nothing," we are annihilated, for what is thought to be meant by "nothing" is without relation. To consciously be is to consciously think, and to think is to relate. How shall the unrelatable be related?

Both the male and female facts are positive ones, differing, not in degree, but in quality. Neither of these facts is a fact *de novo,* but each is derived from the other. The male fact is not such by its own virtue, but by virtue of the female fact. This results from complementary ultimateness which depends on ultimate betweenness, the betweenness between the complemental ultimate and the between ultimate being primal and uncreate—there being no primal and uncreate.

The great, over-riding *between* fact dominates and controls all the emotions and acts of everybody. It dominates everything contributing to emotions, intellections and acts—it dominates everything. That it centralizes in the sex fact marks a conquering epoch in universal verity, bearing in itself all the authority of a cosmic rescript. The sex fact is the All-fact. Without the sex fact subjectivity could not be, and without subjectivity objectivity could not be. So then, *between* the two sex facts swings the universe.

Is it marvelous that masculine man swirls down life in a euroclydon of lyssic stress? Is it wonderful that the same is qualifiedly true of feminine man? What else could the Kosmos do? Self-perpetuation is the bottom impulse of accomplished being. The Kosmos *is*—intelligently *is*. If not intelligently so, whence this providence? Shall a lesser beget a greater? And there is no *dumb* matter, for whence the dumbness? Who is it that says "dumb matter" when all matter is mind?

Note the lovers. What is it *between* them? An unbridged abyss. But they will bridge it! Why? Because, by a mandate as old and divine as Time and God, they *must*. What are they doing? They are conserving each other, conserving themselves, conserving the universe, even as it is conserving them. What niceties of cognizance develop *between* them—nuances in meanings that defy speech, being ineffable. How their logic is subsumed in feeling and what a riot of emotions. They *think* with their hearts, and each is the other's code of ethics—religion. Think of the catasterisms of pregnant trivialities that twinkle *between* them. And oh, the far-reaching tremendousness of their baby-talk! For what is back of its mere phonation? But the soiled Venus—may sexual conjunction be desecrated? No, not IT, but the *fact* may be, and enormously is profaned. *Between* Love and love what constellations of divinities have been created—Eros, Aphrodite, Urania, and the rest. And it all comes out of the sex fact. Sex is unconditioned—it knows no statutory law. This, whether convention will or not. Love brooks no artificial bar, and the sex fact laughs down priestly ceremonials. The world is moving—but so slowly—toward the climax of sex righteousness. The exigencies of sex have no philosophic equivalents, and are not relationable to legal technique. Bald-headed salacity and the bone-pig ethics of young puberty—what shall we do with them? I suspect we shall have to tolerate them, for the abolition of sex would be the only remedy, and to do this would be to abolish the universe, and that would subject us to great inconvenience. We can statute *at* sexual abuse—it has peripheral advantages. Let us bear with sex—since we must—regulating excesses the best we can.

*Let it be noted that although unity is an incontestible fact, it merely represents the sum of its parts, and these involve betweenness.

There is no insurance, states an exchange, against the accident of birth.

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The Soul knows only Soul, the web of events is the flowering robe in which she is clothed.—*Emerson.*

OPENINGS FOR PHYSICIANS.

AT this season, numerous recent graduates are seeking locations. To some, the necessity of earning a living is absolute. Fortunately, the knowledge that the medical profession is crowded to the point of tolerance, has become so well diffused that comparatively few men now begin the study unless they can see their way clear to living three or four years after graduation independently of the returns of practice.

It is not our present intention to discuss the economics of practice in any broad sense, nor to indulge in either optimism or pessimism. We shall limit ourselves to the case of the man about to enter practice and who simply must make a living. It is of no use to say that he ought not to have studied medicine, that he ought to have had sufficient foresight to have been born into a family of ample means, that he ought not to have married till he was settled in a career, that he ought not to have left a paying occupation simply because he wanted to study and practice medicine.

In the first place, this degree of optimism is warranted: Any man of fair intellect and industry, even if no better educated than the law requires, and with any ordinary degree of physical or social handicap, can eventually make a living in the practice of medicine. Wm. Pepper, perhaps the most successful internist in America, was by no means the physical type of a physician. D. Hayes Agnew, who achieved the highest rank as a surgeon, gave up practice as a failure and later returned to make a brilliant success. There has been much nonsense written as to the value of a beard or a dome-like forehead, of dressing and living up to lay ideals of the physician, of the direct reward of virtue and the direct pecuniary punishment of drunkenness and various other bad habits. There seems to be no physical build, or method of speech or dress or conduct, or social or financial condition that is the index of success or failure.

In medicine, as in many other vocations and, indeed, as in most of the critical matters of life, one of the most important points is to hang onto the rope.

It seems logical for a young man to say: "I have prepared myself thoroughly for medical work. I am a gentleman. I have some acquaintance and some dignity of bearing. I will engage a suitable office, on a modest scale, hang out my sign, and trust to Providence for enough practice to pay expenses." *We have heard of a few cases* in which this logical attitude was justified by the outcome. On the other hand, we may cite the cases of a married man who was mature in years and appearance and of considerable acquaintance of the kind that might reasonably be considered favorable to immediate professional employment. He was turned out of his house and his furniture seized for rent. Another man, with some small capital, married a girl of excellent social standing and of a family of some means. She died of puerperal fever indirectly due to poverty, and the doctor was forced to take a salaried position. Another physician, a bachelor, almost starved to death until a kind-hearted physician in good standing, with somewhat doubtful propriety, got him a position in a quack establishment. Another man, with a prosperous drug business, at the age of thirty decided to study medicine. He ran his business till he graduated, then sold out and opened a well-equipped medical office. After a few months, he found that he was not making expenses and he drifted from one position to another till, at the age of fifty his wife is taking boarders and he is earning a small salary in a quack institute.

In all these cases, the conditions seemed unusually favorable. We do not allude to the numerous cases in which young men of no particular acquaintance or standing, have opened small offices and have failed. What we wish to impress upon the man embarking in practice, young or old, is the extreme probability of disaster if he has no source of support other than his practice, that will suffice for the first two or three years.

The number of positions in which medical practice is salaried is relatively small. There is a limited number of openings for chemists, bacteriologists, instructors in colleges, etc. These positions usually demand qualifications far above the average and pay ridiculously small sums. Those that pay anything like living wages—say eight hundred dollars and upward—usually require the entire attention of the incumbent. Those that leave him free to practice medicine sel-

dom pay over five hundred dollars a year, and often less.

Of salaried positions in medical practice, the most desirable, from most points of view, are the government services of the Public Health and Marine Hospital branch of the Treasury Department, the Army and the Navy. The first seems most desirable because one's superior officers ar eexclusively physicians, because the stations are mainly large cities, and because there is much less discipline and red tape than in the other two. It is generally understood that the social position of the army surgeon, with regard to other army officers, is somewhat better than that of the junior navy surgeon. The actual medical work of the first service is greater and more regular than of the other two, and, hence, the service is more desirable for one with genuine professional instincts. Then, too, the latter services are especially liable to the encounter of serious emergencies requiring great operative skill for which the routine affords no adequate experience. These services pay $1,600 a year at the beginning, with occasional promotions, so that, by the age of fifty, the physician could reasonably expect an income of about $3,500 to $4,000. The absence of office expenses, certain perquisites, pretty regular annual vacations of about a month, occasional pleasant details and a retirement with pay, at the age limit, render these government services far more desirable from the financial point of view than 90 per cent. of private practices. But, unfortunately, only a few vacancies occur each year, so that only about 1 per cent. of the medical profession can thus be provided for, and the requirements for admission are very high.

Various civil service and more or less political positions exist under municipal, county and state governments. The most numerous are in connection with the care of the insane. Possibly another 1 per cent. of the profession can be accommodated in these positions, but many and at any rate all that are especially desirable, are closed to the average recent graduate.

The attendance on the sick in penitentiaries, on the pauper class not lodged in institutions, etc., is usually provided for by contract with the appropriate local government. Usually, more or less political influence, as well as practical experience and the passing of an examination, is necessary. According to local conditions and precedents, there may be a fair salary with requirement—not always enforced—of exclusive services, or the salary may range from $100 to $500, or thereabouts, with privilege of private practice. In either case, there is not much chance for a livelihood from such a source, for the beginner, and we know of a number of instances in which men of twenty years' practice have been glad to hold on to such offices.

Passenger steamers, at least on the ocean, must carry one or more surgeons, but most of the great transatlantic lines are foreign and are manned with foreign surgeons. Such positions are quite desirable from some standpoints, although they have their objections, but there are few vacancies and recent graduates are rarely employed.

Theoretically, there ought to be numerous opportunities for positions of assistant to a physician in full practice. Unfortunately, the present overcrowding of the profession prevents the average physician from ever reaching a stage where he can afford an adequately paid assistant. The use of an office and laboratory, occasional crumbs of practice and minor courtesies represent the usual standard of recompense for assistants. "Salaries" of five or six dollars a week do not go begging, and we have even known of rich physicians exacting a tribute of a thousand dollars a year for the privilege of working as an assistant. So far as we know, positions as assistant at a living salary are mainly limited to sons, nephews and sons-in-law of unusually prosperous physicians.

Speaking generally, there is very little use for the average recent graduate, without influence or exceptional attainments, to seek a salaried position. There is one considerable exception to be noted. Quack institutions of all sorts are anxious to get fairly well-qualified physicians and such employment can be obtained, not without effort, but still rather easily. We have even known of men of good quality, who accepted such employment under pressure of family duties and who subsequently entered legitimate practice and received the pardon of their associates. Still, we would point out that it is equally easy to teach, to do clerical work, to act as drummer for a wholesale drug house or to engage in some other respectable lay business, that just as much money can be made in these capacities and that it is better to delay entering upon private practice until enough can be saved to pay expenses for, say, two to four years. The practice of medicine without an honorable professional standing is worse than Hamlet with Hamlet left out.

For the young medical man who must make a living from the start and who insists upon making it in medical practice, we would suggest the not altogether comfortable but inevitable principle of balancing supply and demand. In other words, unless he chooses to run great chances of failure, he must go where there is a vacancy, and this means that he must accept a location which is, in a relative sense, undesirable. Such vacancies may be encountered in mining and similar industrial communities, sometimes as salaried positions, to a large company, even including a few large manufacturing concerns in large cities, sometimes in openings for private practice in a rather

isolated population, either in the city or in country districts. A much better clientele can be found by the beginner in the country than in the city, and country life is by no means undesirable, either professionally or socially, except on somewhat superficial consideration.

This is not the sort of an article that we should have liked to write under the present heading. It would have been much more pleasant to assure the recent graduate that there was plenty of opportunity for any sensible, energetic and well-educated young physician, either to work up a private practice to a paying basis within a few months, or to secure an official position or employment as an assistant at a fair salary. Unfortunately, as President Lincoln once said to an applicant for a position, "There are too many pigs for the tits."

On the other hand, there is this much comfort that can be had. Any energetic, fairly skilful and tactful physician who can command support for, say, three full years, can scarcely fail to make a living out of medical practice, and he can be reasonably sure of an honorable and pleasant, though by no means easy or lucrative, position in society. And we wish to emphasize the principle that it is better to lay aside the investment of work and money represented in the medical degree, temporarily or permanently, and to earn one's living by honorable, perspiring toil, than to practice medicine outside the pale of legitimate professionalism.

TRIPLETS AS A FINANCIAL PROBLEM.

THERE has recently been decided a case in the Common Pleas Court of a neighboring state which throws an interesting light on a phase of medical practice. It seems that a certain family physician contracted to attend a woman in confinement for the modest sum of eighteen dollars. No further agreement was made. On the day of the accouchment it seems the busy physician presented to a surprised but happy father a fine set of triplets. Now the attending physician sent in a bill for fifty-four dollars, or eighteen dollars for each child. The physician's argument was that he contracted only to deliver one child, and that it was an underhand trick for him to be compelled to arrange for the reception of three. On the other hand, the father claimed that he made a plain deal with the obstetrician in that he was to attend the case for a certain set sum, no mention being made of trouble for extraordinary conditions.

In the eyes of the law it seems that a prosaic judge decided that the layman's condition was correct; the contract was made and the family were entitled to spring as many babies as President Roosevelt himself could imagine on the unsuspecting doctor. The case was further complicated by the fact that the physician himself was away from home at the time, and his place was taken by his substitute, who called in a consultant, but these facts did not affect the legal phase of the question.

It would seem as if this were law and justice; the physician became a contractor and was forced to fill his terms. It would be far better to have a distinct understanding in these cases, should unforseen circumstances arise. Also, it would seem from this distance that a physical examination of the woman might have revealed beforehand her real condition, but this medical point was not touched by the Court. If doctors will become contractors they must be more wary or fall by the wayside. Many contracts contain the statement that the contractor is not liable to failures or delays outside of his control, and so it should be with the good family physician. If he meets triplets, let him, if possible, diagnose the condition beforehand, and being forewarned he becomes forearmed.

FACIAL EXPRESSION IN DIAGNOSING MENTAL DISEASES.

THE layman is often puzzled to determine how a physician decides in borderland cases of insanity. In the courts the other day an expert testified that a woman alleged to be a paranoiac was a sufferer from delusions, although her answers and behavior were exemplary in court. The expert explained this discrepancy by the statement that she had been tutored by her lawyer to deny her vagaries on the witness stand, although she still believed in them. The stimulus of being in court held her in check. This is often true. An insane patient placed on the witness stand may make for the time being an excellent witness for himself.

The face is an excellent index in certain diseased conditions, too little studied and too little understood. The family physician has here a great advantage, for he should be able to detect changes better than a strange physician. We can make it a working rule, as Shaw has pointed out, that the deeper the facial structure is affected, the less favorable is the prognosis as to mental recovery. The malingerer can imitate speech, dress and action, but he cannot assume the pallor or the flushing, the harsh skin, the lack lustre or glistening eye. It is in the melancholic forms of mental disease that the face is extremely diagnostic. As a rule, the head is bowed down, the face is pale, the hair unkempt, the muscles are placid, allowing the cheeks to sink, the lower jaw to drop down. In fact, the diagnosis can almost be made without further examination of the patient. This is particularly true in simple melancholia, for in the delusional

form the hallucinations often express themselves in signs of dread or horror.

Again, in the maniacal forms of mental disease, the emotions are exhibited on the face in elation, joy or cheerfulness, anger or rage; all is changeability, contrasting strongly with the dead monotony of melancholia. In acute mania the face is a playground where run, leap and gallop in quick succession joy, anger, wildness, distraction, fear, lasciviousness and sadness. If the case takes a pleasant turn, the patient may actually approve in his personal appearance, looking healthier, younger and handsomer. But the change soon comes, and the patient becomes wornlooking. In chronic mania the face becomes deeply wrinkled, the patients, especially the women, become intensely ugly. There may be fixed expression of some intense emotion, such as anger, fear, pride or vanity.

In the delirious forms of mental disease the expression is very typical: there is constant motor agitation, tremor and great loquacity; while in the stuporous forms of mental disease absence of expression or extreme fixation is common. There is no facial reaction to words, while the pupils are dilated and sluggish.

Where hallucinations exist the face expresses the emotion beautifully. Thus in delirium tremens, the face is perspiring, flushed or pale; tremor exists in the facial muscles when in action, and even in repose. The expression is tensified, the eyes injected, the pupils dilated. There is no exaltation and yet no pain; terror and apprehension are the predominating features.

In mental decay the face is most typical. In all sorts of dementia confidence can be placed in the study of the face, while in ataxic forms of mental decay, such as general paresis, the face plays a prominent part. So it is in cretinism, in moral imbecility, idiocy and other forms of psychical defect, the face plays its rôle in diagnosis. It is well to remember the importance of the face in diagnosis. To the layman it may seem an uncertain, trifling aid, but to the practiced eye it may settle a perplexing problem with promptness and certitude.

LAY PRESS CURES OF GRAVES' DISEASE.

PERHAPS one of the most unfortunate features of our civilization is the fact that from time to time we read in the columns of the lay press of alleged cures—generally at the hands of charlatans—of such diseases as consumption, cancer and tabes. Spurious claims of this sort, exploited in this manner, in vehicles of information which the public has, for the most part rightly, come to look upon as safe, must inevitably result in shattered hopes among many sufferers from these diseases, who read or are informed of these allegations. Thus oftentimes ensue fatal results which might not have proved so had these victimes preferred the conscientious and scientific advice of medical graduates.

We have before us a case not quite of this sort, for two reasons: the physician quoted is an excellent and well-intentioned man, the statement of whose work was probably transferred from the columns of a medical journal; and the case is one of Graves' disease, in which the prognosis is not nearly so serious as those we have mentioned. Still, let the professional reader judge if even such a report is not capable of interpretation which must prove baneful and of raising hopes which may by no means be realized. We condense:

A serum has been discovered for the cure of exophthalmic goitre or Graves' disease. This complaint has heretofore been considered practically incurable, except by operation. (A number of harrowing symptoms follow in detail.) The disease is caused by a superfluous secretion by the hypertrophied gland of too much of its regular fluid; or else, owing to its diseased condition, it makes some poison which infects the body and leads to death. The new serum is made from human thyroid glands so diseased. Five cures have already been effected by it. A permanent cure can be accomplished in two weeks, in which time the patient receives a hypodermic injection of about twenty drops of the serum every other day.

There are at least four theories of the etiology of the disease: that it is a pure neurosis; that it is due to lesions in the medulla or sympathetic nerve; that the parathyroids play an important part in the pathology and that their atrophy may be the cause of some of the more serious symptoms; to these three there may be added as a fourth, that above presented, in the rather loose phraseology of the lay reporter. In the present state of our knowledge of the disease one cannot proclaim any among these theories as being correct, to the exclusion of the others. Assuming the neurosal theory or that of the medulla and the sympathetic, as being the correct one, no serum will be effective. Moreover, cures have been claimed (and made, no doubt) under other treatments. Nor has surgery provided an absolute cure, by any means.

With regard to prognosis, cases presenting the essential symptoms of Graves' disease have subsided within a few days; cases developed from fright have followed this brief course, without any specific therapy. In such a case a serum might have been claimed as the essential remedy. On the other hand, death has supervened within a few days in acute cases. Generally speaking the disease lasts several years. There may be spontaneous recovery at any time within a year of the development of the symptoms. Recovery under ordinary treatment is rare in advanced cases, and here we are inclined to doubt the efficacy of any serum.

The point is, that with regard to any therapeusis,

data should not be submitted to the laity until the profession is practically agreed, after exhaustive investigation, that a suggested line of treatment will certainly make good its claims.

JOHN WESLEY'S "PRIMITIVE PHYSIC."

NO doubt most of us, in thinking of this great man, associate him with the religious field. He appears, however, to have been also the author of the very meritorious medical work having the above title.

It is natural that he who preached cleanliness to be next to godliness should in his treatise have laid great stress upon the use of water, both internally and externally. He was, indeed, so far as we know, the first writer upon hydrotherapy in medical history. Most of his receipts recommend water in some form or another.

Some of the remedies prescribed were rather heroic: For an acute catarrh (which he picturesquely termed a "running at the nose") the patient was advised to sniff up a teaspoonful of spirits of hartshorn. They must have had strong noses in those days. For a cold in the head one was to "pare very thin the yellow rind of an orange, roll it up inside out and thrust a roll into each nostril." The sufferer from ague was to "apply to the stomach a large onion slit." For violent colic a live puppy was "to be held constantly upon the belly;" an operation for appendicitis would have been more effective. We fear many deaths followed upon such colics, which puppies were quite unable to prevent. Turpentine was to be applied to a "cut that festers." "For dull sight drop in two or three drops of juice of rotten apples often." The thin skin of an egg shell was advised to be used for a court plaster. For the prevention and cure of toothache the teeth were to be rubbed often with tobacco ashes or one was to be electrified through the teeth; or roasted parings of turnips, as hot as could be endured, were to be placed behind the ear; or a bruised leaf of betany was to be put up the nose; or a slice of apple slightly boiled was to be held between the teeth.

The first edition of Wesley's work was published in London in 1747. Many years later Bishops Coke and Asbury recommended it to their American followers. They recognized the differences in the two countries regarding climate, the constitutions of patients, and even the qualities of simples. So that they had Wesley's treatise revised for American use by Dr. Wm. M. Cornell, of Berkley, Mass., who practiced in Boston in 1845. Cornell added precautionary and explanatory notes and some receipts suitable to our climate.

GRAFT IN PUBLIC OFFICE.

THE public and, in patricular, medical and scientific circles have recently been scandalized by the announcement of grafting by men of high position in government employ. So far as we can learn, the charges made are that government experts in sanitary maters have received compensation from outside sources for outside work. We do not attempt to pass judgment upon any particular case, in the absence of exact understanding of the circumstances. Yet, we venture to point out that the ethical question is not so simple as it appears to some persons. Obviously, an official, paid to do certain work by his regular salary, is dishonest if he demands private compensation for the same. Obviously, too, he is dishonest if he neglects his regular duties to engage in outside occupation at extra pay. It is at least in bad taste for an official to make use of his public advantages to advertise his private attainments and to secure private engagements. And still, we would scarcely assent to the general principle, so commonly declared or implied, that when the public employ a servant they monopolize his entire earning capacity. There is no question but that the public servant should be as free as any individual working for himself or for a private employer, to enjoy ordinary recreation and society or to engage in study, after office hours or, when the nature of his occupation is such as to do away with definite hours of labor, after he has rendered reasonable service in his office. The sole qualification that we would be disposed to admit to this statement is that there should be nothing in the disposition of the hours of leisure to interfere with the proper performance of official duties. We can, personally, see no reason why the man who would rather work than play in his hours off duty, should not do so, with the same qualification that his work must not disqualify him for the proper performance of his duties—and this qualification includes the prohibition of occupations detracting from reasonable standards of dignity and personal influence.

"Thou shalt not muzzle the ox when he treadeth out the corn," says the second law to the Jews. In other words, reasonable personal use of commodities is to be granted to servants of all kinds. The exact limitations of what we moderns call graft, cannot easily be set, but must be determined by individual circumstances and, largely, by precedent. In regard to the particular class of public servants under discussion, it seems to us that they should not only be allowed but rather encouraged to have extra-official employment of their services, under proper circumstances. Generally speaking, the scientists, physicians, engineers, explorers and other professional men employed by the government are worth more than their salaries and yet it is not practicable to increase their salaries commensurate with their indi-

vidual or even average value. Whatever the salary, to lay down the rule that no other avenue of gainful occupation be open to the government employee, will tend to kill the ambition and to drive the energies of the employees into petty hobbies, of no value to any one or into mere diversion.

In our humble opinion every professional servant of the government, surgeon, bacteriologist, archæologist, engineer, librarian, etc., should be a man in touch with other workers in the same line, and he should be a man of good standing and reputation, according to the nature and grade of his work. In the highest grades of public service, these men should be—as indeed they often are—men of eminence and wide renown. If this condition is fulfilled, it is only natural that occasions should arise when their temporary services will be needed by local governments or private concerns, and, under such conditions, we see no reason why they should make a present of their services to those well able to make compensation.

Without regard to any ethical consideration, the government—national, state, or local—has a perfect right to word its contracts with its employees so as to forbid any outside compensation whatever. Wherever tried, this plan involves dissatisfaction and individual injustice, but the only really serious objection to it is that it tends to reduce the quality of the public servant. But let us be consistent: if the city physician is to be forbidden to take a private case, if the health commissioner must confine his usefulness to his own locality or must render gratutitous service elsewhere, if the savant in national employ must never give a lecture or write an article for pay, let us also cut off the little favors which the army and navy grants to officers and their families, let us make the President pay his own railroad fare on all occasions and prohibit his special trains.

THE HENRY PHIPPS INSTITUTE.

THE second annual report of this institution, which is devoted to the study, prevention, and treatment of tuberculosis, is—as was its predecessor, the first report—a most notable contribution to the literature of this subject. The director, Dr. Lawrence F. Flick, himself in his early manhood a consumptive, has since been an earnest student of the disease. He has studied with understanding; and in his case the combination of facts gleaned and of native sense has resulted in wisdom of the highest order, wisdom of the greatest value to the body politic. And Dr. Flick has gathered about him scientific men whose investigations, added to his own, have produced the important volume which now lies before us.

Dr. Flick holds, and we believe rightly, that tuberculosis is mainly the result of the artificial conditions of indoor life. This disease is implanted in the house; develops in the house; and matures in the house. Without the house, then, he maintains, there could probably be no tuberculosis, "at least as a cause of death." Here is a sweeping statement which will probably surprise many among us. However, upon mature reflection the physician will no doubt conclude that Dr. Flick is right.

What, then, are the steps which should logically follow? Human beings should live and work in houses properly constructed and maintained. Particularly should shops and factories be sanitary; and schoolrooms, in which children spend so many hours during the formative period of life—both physically and mentally—should be wholesome and healthful. In all enclosures, cleanliness, ventilation, drainage, comfort and convenience should be required and maintained.

All this is very easy to state, but how is it to be done; how are tenements to be secured for the poor, who are most prone to tuberculosis—tenements built primarily for promoting health rather than for returning income on investment for the builder? Modern tenements, built by the philanthropically minded, are at best but drops in the bucket. For the consumptive poor the problem is even more difficult, as Dr. Flick explains with his customary lucidity, and out of his rich experience in this disease. The consumptive has to seek the most wretched and unwholesome of all the tenements; his coughing and his other symptoms are so objectionable to neighbors that landlords want to get rid of him. The tuberculosis laborer can earn but little; "he is often without money on rent day," and so it follows that only the houses which do not rent well are open to poverty stricken consumptives, who "circulate in the worst and most unsanitary houses, and infect each house into which they move."

As to treatment, this second annual report has but little new to offer; rest, nourishing food, and fresh air remain the fundamentals. These are unfortunately the three luxuries which the poor are least able to command. "Under the goad of necessity they neglect the disease until it has begun to incapacitate them." Thus then the tuberculosis problem presents about the following features: the advice to those having unexplained symptoms extending beyond the limits of an acute illness, to consult a physician; the early diagnosis by the physician; hygienic housing conditions; the care of the very poor in such manner that philanthropy will not pauperize them.

THE HEART IN TUBERCULOSIS.

BOTH Bodington, the English pioneer of modern phthisiotherapy and his Teutonic co-worker, Brehmer, laid stress upon the undersized heart in the causation and pathology of this disease; they

believed, moreover, that small aortas and small vessels were also factors. This position has always been a thoroughly scientific one; for a body with insufficient circulatory equipment must needs be starved for oxygen; and the tissues of such a body must surely be an inviting soil for the growth and propagation of bacilli. Brehmer in his therapeusis took into consideration the small heart; for he sought to develop and strengthen this organ by requiring his patients to take carefully graded exercises among the hills of Gœrbersdorf, where he placed his sanatorium. It is said, indeed, that he selected this village as a site because the hills about were adapted to this phase of his treatment.

Few phthisiologists have disagreed in this respect with the two great physicians who began the modern treatment of consumption. Woods Hutchinson, however (*N. Y. Med. Rec.*, March 13, '06), goes to the extent of declaring that the heart is alone to be considered and that no attention whatever need be paid the lungs. This is an extreme view—and extreme views are always dangerous ones; besides, it is an unscientific course to pursue in any disease to treat one organ or tissue alone and ignore the rest. Hutchinson had much better have simply laid emphasis upon the treatment of the circulation, without advising in addition that the other organs be neglected. This is, however, the only criticism one would make of his paper, which is indeed a comprehensive and valuable one. He well declares that the consumptive type has been so variously described that the whole race might well be included in the category. There is the type with clear skin, bright, expressive, luminous eyes, aquiline nose, slender figure, tapering fingers and blue veins. Again, there is the swarthy type, stupid, thick-skinned, dark-haired, heavy featured, squat built. Another is the red or tawny haired, freckled skin, and dark eyes, eyebrows and lashes. Unusual tallness of stature is a very predisposing factor; in all men of six feet and all women above five feet seven who have reached their maximum height before the eighteenth year the disease is to be feared and guarded against. In all giants the heart is undersized. Hutchinson declares the rate and quality of the pulse to be the most important single symptom with regard both to diagnosis and prognosis. Rest is imperative for all patients who have a persistent afternoon temperature of 100° and over. He would counsel "enormous overfeeding." This is a mistake. All food which cannot be digested is as a poison within the system, besides which the digestive organs are thereby overtaxed. The feeding should be generous—as much as can be assimilated and metabolized—and no more. His opinions concerning fresh air are now shared and approved by all physicians.

BIBLIOGRAPHICAL

Consumption: Its Relation to Man and His Civilization. Its Prevention and Cure. By John Bessner Huber, A.M., M.D., Fellow of the New York Academy of Medicine; Member of the National Association for the Study and Prevention of Tuberculosis; Visiting Physician to St. Joseph's Hospital for Consumptives. Cloth, pp. 536. Price, $3.00 net. Philadelphia: J. B. Lippincott Co., 1906.

In this carefully indexed volume the practitioner will find an exhaustive up-to-date presentation of the modern methods of prevention and cure of tuberculosis. The means of cure—tents, outdoor paraphernalia of all sorts, dispensaries, hospitals, sanatoria, farm colonies are authoritatively described, as are also the subjects essential in practice with regard to this disease—early diagnosis, symptomatology, the technique of examination, and of casetaking, the classification of cases, the use of tuberculin, the staining of the bacillus; milk and meat inspection, disinfection, hydrotherapy and "hardening." The work is indeed a cyclopædia upon this theme. Dr. Huber has, besides preparing a handbook for the practitioner, provided also a comprehensive exposition of the effect which consumption has had upon civilization. He has considered its all-pervading relation to human affairs, believing that it is essential to view the subject thus broadly. He has recognized that medical science must call to its aid many other phases of activity—sociological, legislative, humanitarian—if it is to make the fight against the Great White Plague successfully. The book, therefore, is addressed both to the physician and the layman. The History of Consumption, the Specific Cause, Predispositions, Economics, the Home, Administrative Measures, Non-Governmental Activities and many other phases have adequate and ample exposition. There is an exhaustive list of public and private sanatoria, homes and camps. The book is profusely illustrated, and both the author and the publisher are to be congratulated upon its generally attractive appearance.

The Health-Care of the Baby: A Handbook for Mothers and Nurses. By Louis Fischer, M.D., author of "Infant Feeding in Health and Disease," "A Text-Book on Diseases of Infancy and Childhood"; attending physician to the William Parker and Riverside Hospitals, etc. 12mo., cloth, 166 pages. 75 cents, net; by mail, 82 cents. Funk & Wagnalls Company, New York.

This hand-book for mothers and nurses will be especially timely, now that the baby's most trying period, hot weather, is at hand. The book covers the subjects of feeding in health and disease; gives directions for the management of fever, and is a guide during such diseases as measles, croup, and skin diseases, and gives ample advice in cases of accidents, poisoning, etc. The correction of bad habits, and the management of rashes, have received careful consideration.

Surgical Suggestions. Practical Brevities in Surgical Diagnosis and Treatment. By Walter M. Brickner, M.D., Chief of Surgical Department, Mount Sinai Hospital Dispensary, New York; Editor *American Journal of Surgery*, and Eli Moschowitz, M.D., Assistant Physician, Mount Sinai Hospital Dispensary, New York; Editorial Associate *American*

Journal of Surgery. Duodecimo; 60 pages. Cloth, 50 cents. New York: Surgery Publishing Co., 1906.

This little book is novel, not only on account of the many original, terse and epigrammatic practical suggestions given, but in its general appearance and attractive form. It contains 250 suggestions grouped under proper headings and its contents is carefully indexed. While some of the items are familiar to the practical surgeon, they are presented in a manner that will impress them on the reader's memory. The text is printed upon India tint paper with marginal headings in red. This book will be appreciated by the general practitioner, not alone on acount of the value of its contents, but as an artistic bit of book making.

Uric Acid. The Chemistry, Physiology and Pathology of Uric Acid and the Physiologically Important Purin Bodies, with a Discussion of the Metabolism of Gout. By Francis H. McCrudden. Octavo; 311 pages. Price, $3.00. New York: Paul B. Hoeber, 1906.

The results of the author's four years' study at Harvard University has led him to the conclusion that rheumatic diseases and uric acid metabolism do not at the present time seem to be closely related, contrary to the views of Haig and other eminent writers on this subject. It is even asserted that Haig's views are entirely unwarranted!

The author has made a thorough study of the pure chemistry of uric acid, and of its decomposition products, and of those purin bodies which have physiological importance; of the behavior of uric acid in solutions of pure water; in the solution of simple and mixed electrolytes, and of organic compounds; and in the urine and blood. He has attempted to study all the research that has been done on the physiology of uric acid, the effects of food, and of the qualitative and quantitative change in the food, the effects of alcohol, exercise and other physiological functions, and also the research on uric acid in pathological conditions of all kinds, especially in gout. The material has been arranged systematically for practical study, adhering closely to exact statement of experimental data.

The book is a great addition to the literature of this important subject.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, assisted by H. R. M. Landis, M.D. June, 1906. Vol. II. Octavo; 368 pages. Price, $6.00 per annum. Lea Brothers & Co., Philadelphia and New York.

The subject of Hernia is discussed by William B. Coley, M.D.; Surgery of the Abdomen exclusive of hernia, by Edward M. Foote, M.D.; gynecology, by John G. Clark, M.D.; diseases of the blood, diathetic and metabolic diseases, and diseases of the spleen, thyroid gland, and lymphatic system, by Alfred Stengel, M.D., and ophthalmology, by Edward Jackson, M.D. These papers are all of the highest order and worthy the attention of the reader who would keep abreast of the times.

CORRESPONDENCE

HOW I COLORED THE OLD MAN'S HAIR, "FOR TRUTH IS STRANGER THAN FICTION."

To the Editor of THE MEDICAL TIMES:

Perhaps it was because he knew more of the philosophy of art than of its actual practice that the old gentleman called upon me one pleasant afternoon, shortly after I had returned from college to take up the exacting duties of medical practice, and I would have it distinctly understood that he had been a lifelong friend of our family, consequently, as he entered the office, I received him with the becoming dignity his manner always elicited. Now, it so happened that some four years previous the old man's wife had died, and as is not uncommon in such cases, several matrons of rather prepossessing appearance had smiled on him, and had somewhat fired the old man along matrimonial lines; at any rate, he informed me that he had been waiting until I should return from college, believing that I could assist him in a certain way, and requesting that all must be strictly confidential. Having assured him of my profound regard in this respect, he proceeded to say, that he had decided to marry, that he had found a lady willing to join hands and fortunes with him, but that, she being some years younger than himself, had quietly spoken to him concerning certain marks of age which, she being an artist herself, thought might possibly be remedied (by a process, says she, which I hear the young of our higher schools are being taught, and which, in the main, has been successful). And then it was that the old gentleman informed me that it was his silvery locks to which she referred. Hereupon he drew from his pocket an old deguerreotype to show me just how he had looked when he was young, remarking that perhaps it might be a help to me as we proceeded with his case. If there is one thing above another that a fellow overlooks when attending medical college it is how to do the little things. To be sure, we can tell you how to do a hip-joint amputation, describe the life history of the bacillus anthrax, or give the psysiologic action of the digitalis group in full, and yet when the old man asked me to color his hair, positively stating at the same time, that he wanted none of that patent stuff used on his head, I must frankly confess that I did not know how.

Whether this lack of ready knowledge was the fault of those engaged in teaching me, or whether the fault of myself in failing to inquire, I don't know, but I have often since thought that our professor of chemistry knew more on the subject than he cared to tell, himself being a widower, but be this as it may, and realizing that I knew absolutely nothing on the subject, I thought fast, and while the old man was still talking resolved to argue him out of his determination to color his hair, and thus avoid the difficulty. But any one who has ever attempted by argument to persuade a man adversely on any matter relative to matrimony, will immediately surmise just how well I succeeded. So when the old man had finished, I addressed him thus: "Mr. H., it would seem to me that a man of your age and intelligence had better be content by letting good enough alone. Surely gray hairs are honorable, and the possessor of them fortunate. To my mind they are a mark of

surpassing beauty, a thing to be desired; and, above all, the Bible speaks of the hoary head as a crown of glory." "While on the other hand," quickly put in the old gentleman, "Ruskin says that the ascertainment of the sanctity of color is not left to human sagacity; furthermore, it is distinctly stated in Scripture that the Sacred Cord of the Tabernacle was one of color, blue, purple, and scarlet, which cord, says Ruskin, is the fixed base of all coloring with the workmen of every great age, the purple and scarlet being constantly employed by noble painters in various unison to the exclusion, in general, of pure crimson; it is the coloring described by Herodotus, as used in the battlements of Ecbatana, and the invariable base of all beautiful missal painting. Now in the Cord of the Tabernacle the scarlet is the powerful color, and is, on the whole, the most perfect representation of abstract color which exists, blue being in a certain degree associated with shade, yellow with light, and scarlet, an absolute color, standing alone; accordingly we find it used together with cedar wood, hyssop, and running water as an emblem of purification and representative of the color of blood, since it also was to be dipped in the actual blood of a living bird. So that the cedar wood for its perfume, the hyssop for its searchingness, the water for its cleansing, and the scarlet for its kindling or enlightening, are all used as tokens of sanctification, and it cannot be with any force alleged," continued the old man, in opposition to this definite appointment, "that scarlet is used incidentally to illustrate the stain of sin any more than it could be received as a diminution of the authority for using snow-whiteness as a type of purity, because Gehazi's leprosy is described as being as white as snow; therefore," says he, " it is useless for you to argue that the absence of color signifies any greater worth or purity than its presence." "Perhaps you have taken a too exalted opinion," I quickly put in (and before the old man could bring any other dead shot to bear on me), "if white is the presence of all color, and black the absence of the same, then surely *he is richer who possesses all.*"

"All men completely organized and justly tempered," retorted the old gentlemen, "enjoy color; it is meant for the perpetual comfort and delight of the human heart; it is richly bestowed on the highest works of creation, and the eminent sign and seal of perfection in them, being associated with life in the human body, with light in the sky, and with purity and hardness in the earth, death, night, and pollution of all kinds being colorless." "But," says I, "since you insist on Ruskin as your guide, you must remember that death, night, and pollution are formless, cannot be expressed, know no bounds, having neither length, breadth, or thickness; but if a work of form and color be brought into complete opposition so that it should be put to us as a matter of stern choice whether we should have a work or art, all of form, without color, or all of color without form, I think form is beyond all comparison the more precious of the two, and in explaining the essence of the two objects, form is esesntial, and color more or less accidental." "Yet, if color be introduced at all," says he, "it is necessary that whatever else is wrong, *that should be right;* just as the music of a song may not be so essential to its influence as the meaning of the words, yet if the music be given at all, it must be right, or its discord will spoil the words, and it would be better of the two that the words should be indistinct than that the notes should be false." "But natural coloration cannot always be perfectly imitated," I suggested. "Not by an amateur," says he. And so it was that by a series of give and take we perhaps passed an hour or more, when the old man said: "To come back to the subject, doctor, can you color my hair?" Having tackled him on what I then learned was his own ground, and still being afraid to reply in the affirmative, I thought, perhaps, if I took him more generally into the chemistry of the subject, I might possibly escape by some hook or crook, or at least scare him into taking my advice, which, of course, was only concerned in not exposing my lack of knowledge, and what the old man would have termed "preparation."

Now, it must be remembered that although the thing aimed at was to simply color a head of hair which had turned silvery white to one of jet black (as shown in the deguerreotype), it is necessary that the reader keep constantly in mind that this event to the old man was only second to the time when, years before, he had taken a similar step; again, when the heart is young, all the world seems gay, but when it is old, we measure things more by comparison; so, should any one be so unjust as to attach but little importance to the incident, let him remember that he may grow old likewise, and what is more, perhaps desire to marry. In the first place, the old man wanted his hair colored, and had determined within himself to allow none of that patent stuff to be used on his head, and that was No. 1.

In the second place, I was fresh from college, supposed to know everything and a little more, which, coupled to the fact that all of a very well to do relationship perhaps awaited my success or failure, thereby to be governed by the old man's recommendation whether to afterwards employ me or not, and that was No. 2.

For, is it not true, after all, that the small things await our care, while the large ones generally care for themselves? I think my physician friends believe so, anyhow. Then again, a thing well done is always a recommendation for the doer, and may become a perpetual monument to whatever he rears; indeed, upon our doing and saying is all there is in life after all, and the thing done in nearly every instance outweighs the thing said, the two being identical. Again, much of what older people do is mechanical, while the thing done in youth is more often the true measure of the man. To change a head of silvery white hair into one of raven black seems simple enough, and it is simple, if we may judge by analogy, and yet bankers have not done more, neither may they do so much, abstractly speaking; for he who attempts to direct nature, attempts all, while he who directs the affairs of finance, masters but an infinitesimal part of a great whole. It will some day be found that Nature has a great end in view when she either adds or subtracts color, if indeed it be not found to be the measure of life itself as regards its physical interpretation. So it is with light and shade, says Ruskin, for looking from the bright sky to a piece of white paper we affirm the white

paper to be in shade; *i. e.*, it produces on us a sensation of darkness, by comparison, but the hue of the paper and that of the sky are just as fixed as temperatures are; and the sky is actually a brighter thing than white paper by a certain number of degrees of light, scientifically determinable. In the same way every other color, or force of color (for color is a force), is a fixed thing, not dependant on color sensation, but numerically presentable with as much exactitude as a degree of heat by a thermometer. Again, several of the colors are naturally transparent; these are sienna, asphaltum, dragon's blood, carmine, rose pink, and all the lakes and gums, while semi-transparent colors are umbers, vandyke brown, emerald green, brunswick green, ultramarine, indigo, and verdigris. Therefore a chemist unacquainted with the purposes of a pigment will hardly give an analysis of value when testing colors; true he can give the constituent parts, but of what use is that by itself? Purity of tint may be a matter of more value than any description of a color's elements; a blue might be absolutely pure from a chemist's standpoint and yet be of small value to the painter. Professor Nelson says that in decorating a ceiling or wall the painter must follow the same principle as the artist follows in painting a landscape. For instance, if you have a red brick wall close to you in the landscape or view you intend to paint, you must, in painting the wall on your canvas, use the same color that has been used on the wall itself. If you move a mile away from the wall you can no longer use the same color, for the color of the atmosphere has, so to say, coated over the wall with a color of purplish blue or grayish blue, as might be the case, which would turn the red into a lighter or more purplish color. Move the brick wall away to the horizon and you will find that it appears no longer red, but a light purplish color; because so much more of the color of the atmosphere lies between your eye and the obect. On the same principle, we might say that the air is orange-colored, and the sun blue, and while both are seemingly absurd, yet they are demonstrably true; if we but understand what they mean.

Having matched my chemical, with my patient's philosophy of color, hoping thereby to gain time, and perhaps prevent an intellectual disaster, a happy thought occurred to me. Why not color the old man's hair by a regulation of such natural processes whereby colors are made to subserve various ends? And having fully explained to him my full meaning, somewhat after this fashion, he thought it a capital idea. Says I, pigment granules are elementary bodies that precede cells and that still in some cases exist within them, the native pigments being classed under five heads.

1st. Pigments of direct physiologic importance such as Hemoglobin and Chlorophyll.

2d. The derivatives of such pigments.

3d. Waste products, such as uric acid, to which the white color of the garden white butterfly is due.

4th. Reserve products, such as are found associated with fat, and including the coloring matter of carrots, beets, etc.

5th. Introduced pigments, such as pigment taken up by a parasite from its host chlorrophyll from larvæ, etc. The micrococcus prodigiosus growing on moist bread producing the miracle of the bleeding host. The beautiful pigments of birds' eggs being entirely derived from the blood shed in the bursting of the Graafian follicles, while Biliverdin and Hematoporphyrin respectively produce the green blues and the red browns of the combs and wattles of birds. The color pigments which produce the colors of fruits and autumn tints seeming to be associated with a diminished power of assimilation and growth, likewise the senesence of the nerve is accompanied with increased pigmentation.

The old man was delighted, for was not his philosophy and my chemistry proving itself? Away with cosmetics, away with art! Had he not emphasized the harmfulness of "that patent stuff?" He had not awaited my return in vain, he went on to say. Poulton, I continued, has changed the color of larvæ by feeding them in turn on the green leaves and the white midribs of cabbage leaves. Cunningham has caused the under surface of soles to become pigmented by illuminating the base of the aquarium with mirrors, and Schroder has changed certain larvæ from one color to another by placing them on colored papers. Crustaceæ have been bleached by keeping them in caverns, while the colorless inhabitants of caverns have been pigmented by transferring them to the light; consequently the absorption and utilization of light energy, or the protection of protoplasm against light, together with other and various food values, must certainly be amongst the first functions of pigment.

"Capital! capital!" fairly shouted the old man. "Let us begin at once!" Thereupon I formulated the diet, and advised the old gentleman to go bareheaded by day, and while he slept, I concentrated, by a series of cleverly arranged mirrors, specially prepared electric light upon his head.

It is said that for a man to be successful in any undertaking he must not only have faith in it himself, but must likewise have confidence, and believe strongly in himself; and I do not know that at that time, and especially in this particular instance, I lacked either, at any rate, when I began the experiment, the old man's faith was unwavering. Yet it soon became apparent to myself that we were simply chasing the will-o'-the-wisp; and still, from very fear's sake, I said nothing, knowing too well the importance of the undertaking, which, of course, meant wife or no wife, and withal, without cosmetics being the ultimatum, as I afterward learned, and whether I was duped into the undertaking by a woman's sagacity, or not, I likewise do not know, neither did I ever afterward learn. Perhaps she knew we would fail, perhaps she wished us to. But the strain of expectancy and watchfulness proved to be too much, and as the weeks lapsed into months, I perceptibly saw that not only was the old man's hair not coloring, but that he himself was whitening. Possibly I bleached him! Possibly my treatment was ill-timed!

I was called away about this time to finish the second half of a hospital appointment, which a student friend was kindly dividing with me, and, being gone some six months, had quite forgotten my experiment in the onrush of greater and more exciting things, when, filled with medical lore, and ready for most anything, I stepped off the afternoon train on my return home. I noticed a funeral procession passing

slowly down the street. Upon inquiry I learned to my sincere regret that it was the old gentleman who had died, and was then being buried. Of course I joined the procession, and reached the head of the column just as they were lowering him into the grave, and in time to hear from the lips of the minister his final words, which fell strangely upon me, for they were: "Blessed is the hoary head, if he but walk in the ways of righteousness." And then it was that I remembered that color, after all, is to the strong, and that the young of both kingdoms had been used in my quoted experiments.

Mifflinburg, Pa. F. B. BRUBAKER.

RETROSPECTIVE THERAPEUTICS

HETEROPLASTIC OVARIAN GRAFTING FOLLOWED BY PREGNANCY.

"I mixed those children up, and not a creature knew it," was the dreadful confession made by Poor Little Buttercup, in recounting her experiences as the matron of a "baby farm," before she took to the more lucrative occupation of bumboat woman. However, as we recall, her crime was expiated, and the tragic play of "Pinafore" ended with the tar elevated through her confession to his rightful position of ship's captain; the erstwhile captain being relegated to the foc'sle, to which humble position his penalty of birth assigned him. A greater crime, we fear, because more irremediable, was that committed by Dr. Robert T. Morris, when he performed the following operation:

Mrs. W., 21 years of age, began menstruating at 15; this function ceased at 19. Married at 18, she became pregnant soon after and had a miscarriage at the third month. During the two years previous to her entrance into the Post-Graduate Hospital, she had suffered from pelvic pain, headache, hot and cold flashes—common menopause symptoms, which steadily increased in intensity and were most marked at the regular menstrual periods. Dr. Morris diagnosed a cirrhotic overitis. He kept his patient in hospital under observation until an opportunity presented itself for obtaining ovarian grafts from some other patient, to replace her own ovaries, which were to be removed. Soon Dr. Boldt operated upon Mrs. P. for uterine prolapse; this patient was 33, the mother of three children, with normal ovaries, except for the congestion common to prolapse cases. A wedge shaped ribbon of ovarian tissue was removed from Mrs. P. during Dr. Boldt's operation, enough to relieve the congestion. Then came the operation upon Mrs. W., whose ovaries were removed with Tuffier's angiotribe. Dr. Morris used this method because the ligation methods are apt to be incomplete in assuring absolute removal of all ovarian tissue. And Dr. Morris believes that by this means *all* the ovarian tissue was removed in the operation upon Mrs. W., whose uterus and oviducts seemed quite normal. After removal of each ovary a slit was made through the peritoneum of the broad ligament on either side, parallel with the oviduct; and into each slit a segment of ovary from Mrs. P. was placed and retained by means of catgut sutures. Both Mrs. W. and Mrs. P. made good recoveries. Some four months after the grafting, on June 18, 1902, Dr. H. L. Barker, Mrs. W.'s family physician, reported to Dr. Morris that his patient had menstruated at that date, the menstruation having lasted for five days.* On March 28, 1906, Dr. Robert Lount, of Hempstead, N. Y., wrote Dr. Morris that he had under his care Mrs. W., who informed him she was one of his (Dr. Morris') grafting patients. Dr. Lount had on March 15, 1906, delivered her of a daughter weighing seven and one-half pounds; and on April 4, Dr. Lount further wrote that mother and daughter were doing well and that the mother had a good flow of milk. On April 14 Dr. Barker wrote Dr. Morris, stating that he had examined Mrs. W. when she was about four months pregnant; but on account of her distance from his circle of practice he had depended upon others for her care at parturition.

Here then would seem to be a well-defined instance of heteroplastic ovarian grafting, followed by pregnancy and the delivery of a normal child. And a number of considerations crowd themselves upon the mind of the reflecting physician:

Who is the mother of the child? Mrs. P., who furnished the ovum, or Mrs. W., who furnished the nutrition and who endured the labor pains. Evidently the child was the product of the sex cell of Mrs. P. and the sex cell of Mr. W. In the last analysis, then, Mr. W. must have had illicit intercourse with Mrs. P. Why is this man not behind prison bars, such being the case? Why is the district attorney supine in this matter? Is the public conscience indeed so dormant that it is not to be moved by this shocking immorality? It would seem, indeed, that Mrs. W. has simply adopted the child, and that the ovum of Mrs. P. retains its identity in spite of any hospitality shown by the hostess. Haeckel holds that hereditary characteristics are due to "cell memory;" and that the cell memory of an engrafted ovary may not be changed by the influence of its new host. We are not informed whom the baby resembles; perhaps—dreadful thought—it may as it grows develop the features of Mrs. P. We tremble for Mr. W. when the dear relatives and family friends come to admire the baby and declare it looks just like— However, it will be no more than this arch-fiend deserves. Another question: What will be the status of the child with regard to matters of inheritance? Would Mrs. W. still die without issue and leave a million or so to revert to some one else? Would Mrs. P. leave a fortune to her children and neglect this one, who was merely a guest in the economy of Mrs. W.? Imagine Mrs. W. the consort of a European potentate; would this child be in the line of rightful and lawful succession? Reader, lest you slight the importance of this matter, we refer you to the position maintained by Dr. W. H. Saunders, the health officer of the State of Alabama, who "would help to clarify the entire subject of fetal life, and lead to the enunciation of definite, inflexible and absolutely correct principles of jurisdiction applying thereto."

Dr. Saunders maintains that the conjunction of the male and female germ constitutes, from a scientific standpoint, birth; that the term birth should be substituted for the term conception.* Suppose Dr. Saunders were to get his views embodied in legal statutes.

Again: Who will have furnished this child with the

*For details the reader is referred to Dr. Morris' paper: "A Case of Heteroplastic Ovarian Grafting Followed by Pregnancy and the Delivery of a Living Child," *N. Y. Med. Rec.*, May 5, '06.

**Jour. A. M. A.*, Feb. 24, '06

impulse for moral and physical characteristics—Mrs. P., or Mrs. W., or Mr. W.?

There are many more considerations; but the thermometer is in the nineties and the humidity is high. Let us refer the subject for further treatment to the novelist. We only hope, in conclusion, for Mr. W.'s sake, that the influences of environment will, in the case of his offspring, eventually offset and destroy the traces of heredity.

A Common Psychologic Phenomena and Its Explanation.—In an interesting paper entitled "A New and Physiologic Explanation of a Common Pschologic Phenomena" (*Jour. A. M. A.,* March 24, '06). Dr. F. Park Lewis notes that many people have, on first viewing an unfamiliar scene, experienced the curious sensation of having seen it before, no matter how obviously impossible this may have been—as in a part of the world visited by the onlooker for the first time.

In explanation of this Dr. Lewis first presents the most commonly accepted psychologic view—that at the instant of the first glance the mind is preoccupied, and that a space of time, which may be infinite, minute and imperceptible, elapses before the intelligence can grasp the meaning of the sense impression and interpret it into a cognizable fact. In the realm of the subconscious there is no measure of time. One mental impression bears the relation to another which is not consensual with it, as being merely before or after; but how long before or after the mind is incapable of determining. The conscious sensation conveyed to the intelligence is merely that at some former indefinite period, which in point of fact is an infinitely small space of time, although it may seem years away, the same mental picture has been presented as that which is now obviously evident. Almost coincident, then, with the view, is the impression of a former view, and as they are not perfectly blended the one is associated with the memory of the other. Our dreams prove that we have no estimate of time in our subconscious state. Lewis instances the well-known illustration of the man who dreamed that he had enlisted in the British army; was sent to India; served through many experiences; deserted; was recaptured; tried by court-martial; sentenced; led out for execution; placed before the detailed squad and a volley fired. He had been asleep less than a moment and the same noise which had aroused him excited the involved dream extending over years. Every reader must have had experiences to the same effect. This reviewer recalls how as a boy he slept one night with a companion named Robbie. He dreamed in detail that he had gone to see a baseball game—the walk to the grounds, the eager and impatient waiting, the beginning of the play, the decisions of the umpire and the resulting tumult. At one point in the game the batter with a mighty whack sent the ball across the field, so that it landed with terrific force upon this reviewer's eye, who thereupon awoke to find Robbie's elbow impinged upon his orbit.

It is so—that the subconscious mind is unable to measure time. One of the greatest, if not the greatest, achievements of philosophy is that of Kant, who discovered that time (as also space) are original intuitions of reason with which sensationalism has absolutely no connection. The conception of time is an attribute of the conscious, reasoning mind. And the psychologic explanation here stated appears to us competent.

Dr. Lewis now offers another, a physiological explanation, which he considers more logical! In order that a clear and definite picture of that which we see may be conveyed to the brain, the two retinal images must be blended at the cerebral visual centres as the two views of a single scene are blended by a stereoscope. In order for an efficient working instrument the stereoscopic lenses must be focused alike; in the same way, to have a binocular blending of images in the more delicate focal adjustments which are governed by nervous action and muscular effort the eyes must be alike. Sulzer finds the accommodative act in the normal human eye to be accomplished in about 2-100 of a second. In the hyperopic or astigmatic eye the accommodative act would be produced less quickly. In cases where the focal acts in the two eyes are not coincident, it might easily take 4-100 of a second for one to accommodate, or twice the length of time for the more nearly normal eye. An interval of 2-100 of a second would thus intervene between the times that the same picture was focused upon the two retinæ and received by the brain, an interval too short to be recognized by the conscious mind, but long enough to make two distinct impresisons upon the brain, with a vague, an indeterminate, an immeasurable space of time, between. That this explanation is a correct one Dr. Lewis finds verification in the fact that those to whom this phenomenon occurs find it to disappear when focal differences are corrected by proper glasses, permitting thereby concomitant action on the part of the ciliary muscles of both eyes.*

We believe that Dr. Lewis has thus furnished a scientific physiological explanation of the phenomenon he describes. It does not, however, have the effect to set aside the psychological explanation here indicated. These are, it appears to us, both valid; and not essentially differing the one from the other.

Heart failure in Diphtheria is an extremely important subject. Cases are on record in which the happy practitioner, who has brought his little patient successfully to convalescence will be called suddenly but too late to prevent the death which has resulted from the effect of a slight excitement than upon the weakened myocardium. The convalescent in diphtheria must be very carefully watched. Bolton rightly observes (*Lancet,* Feb. 3, '06) that the treatment of diphtheria was formerly directed solely against the local lesion, the modern view inclines toward a systemic intoxication which cannot be prevented by a direct treatment of the local lesion, which is dangerous only in so far as there is mechanical obstruction of the larynx. The toxin attacks directly the nervous and muscular tissues; in the acute stage degenerative changes occur in the nucleus of the vagus and there is fatty degeneration of the cardiac muscular fibres. The muscular power of this organ is lowered and the regularity of its movements is interfered with. A large amount of the poison may suddenly overwhelm the heart and the nervous system; but, as we have observed, the later changes do not cause death unless there is some strain which the heart is unprepared to

*Dr. Lewis would be glad to receive from his colleagues verification of his test, with copies of the prescriptions showing the refractive differences in the eyes (454 Franklin Street, Buffalo, N. Y.).

meet. Most convalescent patients show some such signs of heart failure as irregular action or dilatation. To obviate heart failure antitoxin should be administered as early as possible; thus is the toxin neutralized. From four to six thousand units should be the minimum dose for an ordinary case. (We incline to the lesser dose.) In severe cases Bolton counsels from twelve to twenty-four thousand units, to be given at once; and a repetition of this dosage on the following day, if there is no improvement. There is no danger in the antitoxin—the rashes, joint pains and the like are as likely to follow small injections as large ones. A larger dose is necessary on the third or fourth day than in the beginning. Rest is essential throughout the disease; strain may induce a sudden death. In fatal cases the first signs of heart failure (irregular, small and weak pulse, together with undue rapidity or slowing) come usually about the end of the first week; and death supervenes within the first fortnight. The first heart sound in such cases is short and feeble, the impulse being diffuse and slapping. Under such circumstances the patient should be recumbent, with the head low, and undisturbed as much as possible; vomiting is especially dangerous. The bed should be kept for three weeks from the invasion; if then the heart is good the patient may sit up. At the end of a month he may walk if there are no untoward signs—otherwise the bed must be kept for weeks or months longer. Drugs, considers Bolton, are of little value in the treatment of diphtheria. With the reservation that the best curative agent is antitoxin, we do not agree with him in this. Drugs are never without value if they be used intelligently and scientifically.

The open-air treatment of tuberculosis is dwelt upon by Pettit, of Ottawa, Ill., who is very experienced in this field. The constant supervision of the patient is the most important point in which the sanatorium differs from the "home treatment." Under the former circumstances early symptoms of an intercurrent affection are noted and serious complications promptly dealt with. Medicines are used when there is occasion; their use is chiefly symptomatic. Cough, night sweats, loss of appetite and anæmia are managed generally without drugs, under the influence of rest and fresh air. Home treatment should seem simple and effective; but experience teaches it is not so, for several reasons. So many cases occur in families where it is not possible to apply the anti-tuberculosis treatment. The principles of modern phthisotherapy are not as yet accepted by the laity to the degree which is essential to their application. These principles are not yet fully understood by the average physician, and when they are they consume so much of his time and energy that it is not possible for him to attend properly to the few patients he may have under his care. For practical rather than theoretical reasons the treatment cannot be applied at home. The education of both physician and laity must come through the sanatorium—a training school which should be the center of influence in propagating the new doctrine and its methods.

Several Considerations in the Therapeutic Uses of Diet is the title of a paper by Robert Hutchison in *The Practitioner* for April, which, by the way, is a *Special Diet Number* of this excellent journal and which we commend as an admirable epitome upon this important subject. Diet in many affections is here considered; and a number of practical diet notes are appended.

Dr. Hutchison observes that there is no more ancient method of healing disease than by the use of dietetic means; yet there is none which we use with a less degree of confidence and precision. He sets forth some general rules which should always be borne in mind when drawing up any plan of dietetic treatment.

In prescribing a diet for a case of local disease, do not sacrifice the whole to the part. The organs are "members one of another;" and we must not interfere with a patient's general nutrition in the interest of any particular tissue. This rule finds its chief application in cases of dyspepsia. It is often better for a dyspeptic to endure a certain amount of discomfort after food rather than to lower his general vitality by too great abstemiousness.

No article of food should be forbidden without good reason. We should not be arbitrary; we may furthermore thus ensure greater consistency in the practice of different physicians.

Recommend in acute diseases; forbid in chronic diseases. Before recommending any article find out if the patient likes it and whether it agrees with him.

An article which disagrees had generally best be reduced in amount in the diet than cut off altogether. General and proposed dietary changes should be made gradually. Always bear in mind these three aphorisms:

Hippocrates: Such food as is most grateful, though not so wholesome, is to be preferred to that which is better though distasteful.

Sydenham: More importance is to be attached to the desires and feelings of the patient than to doubtful and fallacious rules of medical art.

Heberden: Physicians appear to be too strict and particular in their rules of diet and regimen; too anxious attention to these rules hath often hurt those who were well, and added unnecessarily to the distress of the sick.

Inebriates as a class received some little attention in a medical section at the recent Boston meeting of the A. M. A. Dr. Butler, of Chicago, declared inebriety to be a disease and that the state should have institutions for its treatment as for the insane. Dr. Hunter, of Toronto, declared that the inebriate on the street should be more humanely treated. He should be taken to hospital and have the best of nursing and medical attention. "He is in a more dangerous condition than a man with a broken leg, and should have better care." This seems to us to be coddling to an unnecessary degree. They do not seem to have heard in Toronto of that "special providence which takes under its care children and drunken men." It is noteworthy how seldom the latter get hurt, while making intolerable nuisances of themselves.

The nature and treatment of rheumatism are discussed by Deeks (*N. Y. Med. Jour.*, March 3, '06), who believes that many painful conditions regarded as rheumatic have nothing to do with this affection. He finds the disease to be invariably associated with hyperacidic or fermentative gastric disorders. The stomach condition is either the primary factor, or at least an antecedent feature, preparing the way for the invasion of some specific organism. A large part of the sugar ingested undergoes gastric fermentation be-

fore entering the small intestine, by being acted on by the various organisms in that organ; one of the products is lactic acid. These fermentative processes do not occur in every person. The rheumatic diathesis is probably associated with deficient power in the assimilation of carbohydrates. Salicylic acid is a powerful agent in preventing fermentation of all kinds, including lactic acid. The regulation of the diet is of primary importance. Sugar and potatoes are to be excluded, and bread limited, especially toast. If fermentation persists twenty drops of dilute nitric acid should be given well diluted before meals for several days; constipation requires rhubarb and soda after meals. Deeks recommends also such counter-irritants as electricity—either static sparks or high frequency currents. We would not ourselves follow this suggestion.

In scarlet fever the throat, although it has been considered to play an important part in the retention of infection, is probably only rarely the source in the later stages; on the other hand, abnormal conditions in the nasal passages are often associated with signs of retained infection. Otorrhœa undoubtedly constitutes a danger. It seems that the infectious agent is not present in the desquamated cuticle. Apart from this, however, return cases may arise from cases in which no morbid condition has been detected; furthermore, a morbid condition may develop for the first time, or recur, after the patient has been considered recovered. Under these circumstances freedom from infection cannot be definitely ascertained; and it is evident that precautions should be continued after isolation is discontinued. Such articles as cups, handkerchiefs, pillows, sheets, blankets, sofa cushions, towels, toys and the like, which are liable to come in contact with the mouth or the nose of other persons, may transmit the disease if smeared with infectious secretions. On the other hand, secretion deposited elsewhere cannot, in general terms, come into action until dry and pulverized; and when due allowance is made for the influence of light, dessication and starvation upon the virulence and vitality of all pathogenic organisms, it must certainly be seldom that germs in dust are received in sufficiently potent dose to cause the disease.

Lumbago is treated by Frauenthal (*N. Y. Med. Jour.*, June 2, '06) by means of an initial hypodermic of morphine (1/8 to 2-3 gr.) at the seat of pain. When there is acid fermentations, indigestion, he employs alkalines and antiseptics. Sodium, potassium and strontium iodide are very effective in absorbing the serous exudate in lumbago fibrositis. Salicylic acid and colchicum aid recovery. Externally the actual cautery, mustard, the hot air bath, hot packs, dry heat (by means of hot plates or flat irons) are useful as counterirritants. Local massage is often valuable, as is also mechanical vibration. Acupuncture sometimes yields brilliant results; a needle three inches long is inserted into the lumbar muscles and allowed to remain from five to ten minutes. The galvanic, faradic, static and high frequency currents relieve the pain in various degrees. The author has cured many cases by covering the area involved with tincture of iodine and then inducing cataphoresis by applying the galvanic current for five minutes; after this he again covers the area with oil of gaultheria, and applies the high frequency current for fifteen minutes; then the vacuum tube is held out a distance of one-fourth of an inch for two or three minutes, to produce irritation. After this treatment, "persons who were helped into the office in excruciating pain have walked out feeling almost free from suffering."

The Russian Red Cross Society, declares Hobb (*N. Y. Med. Rec.*, May 19, '06), has not only aided the military medical department by supplying necessary materials not furnished from the army medical magazines, but has also provided trained nurses, organized its own hospitals, flying detachments, diet and rest stations, hospital railway trains, hospital boats, and the like. It has also taken an active part in the transportation and distribution of the sick and wounded, and has as well looked after their wants in the field, on the lines of communication and at home, supplying them generously with clothing and with every essential to their comfort.

The dissemination of typhoid fever by ants seems to have been observed by S. Mayer (*Munch. Med. Woch.*), who inoculated some mice with the bacilli of mice typhoid and put them in a cage on a window-sill. At a distance from these of some eight inches were other mice, inoculated with para-typhoid, human-typhoid, etc. The first lot died in a few days, while the latter remained quite well. But the cage of the latter mice, having afterward been removed to the same window on which the first mice had died, they soon sickened and died with the symptoms of mice-typhoid. And bacteriological examination disclosed the bacilli of this form of the disease. As a few days before the transfer of the cage ants had appeared on the window-sill they were suspected of having transferred the infection; they were therefore caught and placed on culture media, where they perished within forty-eight hours. Soon colonies appeared on the ant tracks, and these colonies were proved to be of mice-typhoid bacilli. It would thus appear that these bacilli (and if they, why not human bacilli?) can enter and pass through the body of the ant, thus propagating the infection.

Eclampsia is not always characterized by the pressure of albumin in the urine; the latter condition is present in fully eighty per cent. of normal pregnancies. Albumin and casts are found in at least thirty per cent. of all pregnancies. There is thus no reason to suppose that the renal condition is the cause of eclampsia (P. K. Brown, *Jour. A. M. A.*, Jan. 13, '06). There is, however, probably some connection between the albuminuria and the extrarenal cause of the eclampsia; for the two are nearly always associated. Neither any normal end product nor known intermediary product of metabolism is the cause of eclampsia. In some cases deficient thyroid or parathyroid activity probably plays a part. Experiment has demonstrated the fact that there are toxic substances formed in the placenta which are probably responsible; these substances probably cause the headache, œdema, abdominal pain and especially the albuminuria present in non-eclamptic and non-nephritic cases.

Injuries to the Child's Head during Labor was an important subject discussed at the recent meeting of the A. M. A. Dr. B. Sachs, of New York City, spoke of his efforts through many years to interest both the obstetrician and the general practitioner in this subject and of his belief that there are many

imbeciles, paralytics and epileptics living to-day who might have been normal if delivery had been properly performed in their cases. In his experience many cases of infantile cerebral paralysis were either primiparal, or such as had been born after prolonged, often dry, labor. Statistics seem to prove that there is less harm done by forceps delivery than by prolonged labor, although *unskillful* manipulation of instruments is of course attended with disaster. If the life of the mother is not endangered thereby, it were best to curtail the period of labor as much as possible, and not to wait until the child's heart action becomes feeble. Sachs refers to Cushing's suggestion to open the skull at birth in severe cases of meningeal hemorrhage and to wash out the blood clots. In three out of five cases thus operated upon a cure seems to have been effected. Such a daring procedure is, however, of limited application. In general dependence must be placed upon prophylactic measures and upon skilful manipulation during labor. Sachs (himself a neurologist) believes that obstetricians have been too indifferent towards the welfare of the child, permitting labors to be unnecessarily prolonged and "in conditions of distinct disadvantage to them and to society for the entire period of their natural lives." Dr. Gilbert, of Louisville, has in appropriate cases, induced labor, especially in primiparal, two or three weeks prior to the full term; he employs a tampon soaked in a glycerine solution and never introduces an instrument within the uterus for this purpose.

How the Fight Against Tuberculosis Now Stands is considered in *The Lancet* (May 26, '06) by R. Koch, who recapitulates the essential facts regarding infection in this disease. He declares that only tubercle bacilli emanating from human beings need be taken into account, the bovine bacillus being harmless to man. To this declaration many will take exception; especially is it inadvisable, in view of our late meat scandals, to encourage laxity in meat inspection. In all else, however, one must agree heartily with Koch's statements. Only those tuberculous patients who suffer from laryngeal or pulmonary tuberculosis and whose sputum contains bacilli are dangerous to those about them to any degree worth noting; this is the *open* tuberculosis in contradistinction to the *closed* form in which no bacilli are given off to others, and which is quite harmless. Even the *open* form is harmless, provided the bacilli are properly disposed of. The patient becomes dangerous only when he is personally unclean, or so helpless (in the advanced stages) that he can no longer attend to the proper disposition of his sputum. The danger of infection of the healthy increases with the impossibility of avoiding the immediate neighborhood of a dangerous patient. With regard to preventive measures obligatory notification is essential, which can be enforced only by establishing laboratories for the free examination of sputum. The placing of advanced cases in special hospitals or like suitable establishments. Such cases should not die in their homes, where they are dreadful distributors of the infection. Incipient cases should be admitted to sanatoria; the duration of treatment must be far longer than is at present the practice. Real cures are all too few. Dispensaries or care stations for the tuberculous should be established, in which the chief object should be the furnishing of food and assistance—not medicine. The people should be instructed and kept alive to the dangers of the disease.

Dr. Austin Flint has received a loving cup from the Cornell medicos of the class of 1909. Dr. Flint has been a professor of physiology since 1861, so that at his retirement, which was the occasion of this presentation, he was the oldest medical instructor in the county; and we believe those whom he taught will subscribe to the opinion that there never was a better. His students learned physiology, at least. We might here, for the benefit of any brother in danger of falling by the wayside, relate the story that as a medical student Dr. Flint "flunked" in physiology, which circumstance so vexed him that he declared he would produce the best book on physiology extant. And it certainly was the best at the time of its publication.

Those who desire abortions to be done by reputable physicians can best be disposed of after the method of the late Dr. G. A. Peters. A wealthy patient, laboring under the delusion that the family doctor should do anything he would be asked to do, called to make arrangements for this operation upon his wife. Dr. Peters seemed to comply, but as the man was about to leave he said: "Of course you know I cannot do a thing of this kind for my ordinary charges. The price will be very high." "Oh, certainly, I expect to pay you very handsomely." "Well," rejoined Dr. Peters, "it is always wise to arrange such matters beforehand. My fee for the operation will be five million dollars." Thus was the incident abruptly terminated.

The hand that rocks the cradle is no longer "the hand that rules the world." The science which is up to date, declares *Outing,* teaches that the hand which rocks the cradle is the hand which spoils the world. It is abominable, the habit which science has, of upsetting cherished notions. "Babies shouldn't be rocked." By this dictum, however, the mother is emancipated from a thraldom which frequently wrecks her nervous system and brings her to a premature old age; and the peevish whining baby is transformed "into a little creature all smiles and sunshine. Out of the baby it forms a child all sweetness and charm, in the child it inculcates habits of self-reliance that will stand him in good stead when he grows up to encounter the battle of life." There is much more to this effect, for which we have not space; who would have thought so important results could follow from just not rocking?

Mary Putnam Jacobi, who died recently, was a daughter of the founder of the publishing house of the Putnams. She early became ambitious to study medicine, a most heroic position to take at the time of her admission to the Woman's Medical College of Philadelphia, in 1861. Later she entered the Ecole de Medecine in Paris, being the first woman ever admitted to this institution. She was also the first woman member of the New York Academy of Medicine. In 1873 she assumed the illustrious name of Jacobi and became the co-worker of that great physician. All her life she was a steadfast champion of her sex. She founded the Association for the Advancement of the Medical Education of Women. In 1894 she made a memorable speech in Albany in behalf of a woman's suffrage amendment to the State constitution.

MISCELLANY

The meat imported from the United States and Argentine is to be preferred, declares *The Lancet* (London), to the home product.

There are 50,000 blind in the United States. Dr. Park Lewis declares that two-fifths of these cases might have been avoided had proper prophylaxis or curative remedies been applied.

Quadruplets were recently born to a Hungarian farmer, who had already forty-four children. He has no more room in his house, and is at a loss what to do. It is suggested that he write to President Roosevelt about it.

The medical faculty in Paris recently engaged to publish a Universal Lexicon of Pharmacology in nine living languages; at the earnest recommendation of a number of savants it was decided to add Esperanto as a tenth language.

The instinct for bargains which characterizes the most charming of sexes was shown by a young woman of Long Island, who collected $200 for a broken rib, half an hour after her adventure with an automobile—just $200 more than an historic male victim received in a case of total loss.

An association has been formed, states an exchange, for the purpose of supplying, under certain conditions, spectacles to children in London elementary schools. We are glad to know there will be "certain conditions" and that the distribution will not be entirely indiscriminate.

English patent medicines, states *The Hospital,* are applied to the alleged cure of such diseases as consumption, cancer, epilepsy and paralysis. There are at present some 40,000 makers or venders of patent medicines in Great Britain; and these products are computed to supply to the state a revenue of £331,000.

Arsenic iodide is indicated in the scrofula and the scrofulo-tuberculosis of children, in whom the hypertrophied glandular apparatus is in a condition of functional hyperactivity, while nutritional disturbances are concomitant. From 10 to 20 drops of a one per cent. solution should be given morning and evening.

Brain fever, declares *Punch,* is "a complaint unknown to your doctor or mine, but the usual accompaniment of domestic trouble in the mansions of the great, which will invariably baffle the skill of the ordinary practitioner. But a medical baronet, arriving by special train, can cure it by coughing dryly and endorsing the treatment prescribed by local talent."

Other Times, Other Manners.—The *London Times* recalls that in its issue of May, 1806, a decently dressed woman "was last night brought out into Smithfield for sale, but the brutal conduct of the bidders induced the man who was, or pretended to be, her husband, to refuse to sell her; on which a scene of riot and confusion highly disgraceful to our police took place."

Belladonna Poisoning.—Dorland reports three cases from the wearing of plasters (*Am. Jour. Med. Sc.,* April, '06). Belladonna plasters are generally applied by patients in their own initiative; so that serious symptoms may develop before they consult physicians. And these symptoms may mystify the latter if no mention is made of the use of the plaster. Fortunately atropin is rapidly eliminated after its removal.

The sting of bees as a cure for rheumatism was tried by a Philadelphian who bared his back and permitted one hundred bees to sting him. A chronic sufferer from this disease, he was several years ago bitten by these insects and discovered that the next day his rheumatism was better. A counter-irritant, such as the Paquelin cautery, might have served equally well; and the possible danger of infection from the bites of these insects would not have been incurred.

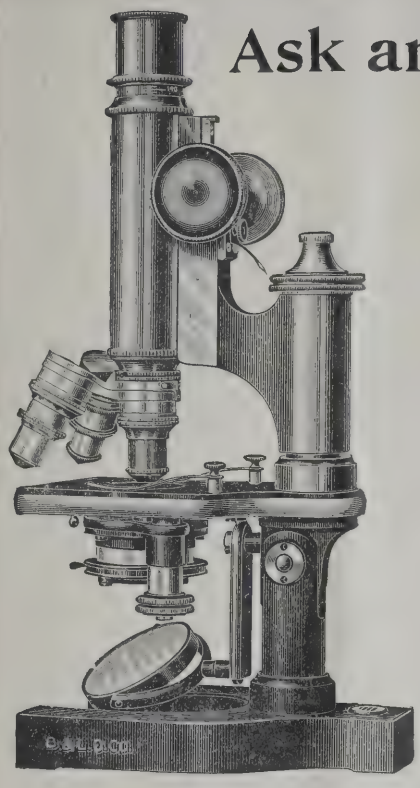
Outdoor sleeping is not unknown in London. A writer narrates having encountered a baby, who was set to sleep in a Chelsea garden during the hot weather. When the temperature dropped the careful parents brought the baby into the house at night; but it was restless and could not sleep. And now throughout the winter the child has slept peacefully in the garden, well wrapped up and with a tarpaulin guarding it from snow and rain. But it is a fine and healthy child and a compliment to the fresh air that London can provide at night.

A Vain Thirst for Gore.—A more or less notorious gentleman named de Castellane recently became vexed over derogatory observations made by another named Regnier. These observations were, in the language of the duello, insults which could be wiped out only in blood. The pair chancing to meet in a public corridor, Castellane declared: "I do not wish to make a scene here. So please consider your face slapped." Regnier, something of a humorist, upon this sent a note to Castellane inviting him to consider himself dead. The gore is yet to be spilled.

Prof. Koch, who has gone to equatorial Africa in order to continue the study of tropical diseases, has informed the Berlin Medical Society that he became so interested in his researches, especially in connection with the sleeping sickness, that he will not return to Germany for two years. He has therefore resigned the presidency of the society. In the last twenty years this great man has visited India, Egypt and the south of France in order to study cholera; South Africa to study the cattle plague; India to investigate the bubonic plague; and East Africa, the Dutch Indies, New Guinea, Italy and Istria to study malaria.

Bovine tuberculosis is very prevalent in Italy because of unsanitary stabling. A company has been established for insuring butchers against loss through condemnation of beef by the sanitary officials. To this company butchers pay a premium for each head of cattle slaughtered or for carcasses brought for inspection to the municipal abattoirs. If the meat is condemned the company reimburses the dealer and retains the carcass to be sold for food, after being sterilized, if only partially infected; or to be used for industrial purposes if found unfit for human food.

The prize ring has been graced by the presence in it of a student of the Yale Medical School; his opponent was the champion of Connecticut, who put him to sleep. Nevertheless we have no occasion to be distressed or mortified, for our embryo colleague "was strong, husky, fast and had a healthy wallop." The *Sun,* which gives but does not vouch for this story, declares that "these are just the qualities required by a physician in actve practice; even the 'healthy wallop' may be serviceable in the alcoholic ward at times." And they might prove useful, too, whenever an obnoxious reporter has to be disposed of.



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SELECTIONS

The Probilin Treatment of Cholelithiasis. In May, 1904, Dr. W. Bauermeister published in the *Therap. Monatshefte* his results from the treatment of gall-stone disease with probilin, a pill composed of acid sodium oleate, salicylic acid, menthol and phenolphthalein. Salicylic acid is an acknowledged cholagogue and biliary disinfectant; acid sodium oleate is also a recognized cholagogue; menthol is an analeptic and carminative; and phenolphthalein stimulates intestinal activity. Since then, four years ago, he has seen probilin give brilliant results in the very severest attacks of cholelithiasis, and he bases his conclusions of its efficacy upon cases treated two years ago or longer.

Thus four patients were not influenced, seventeen were improved, and twenty-one were entirely cured. Similar results have been reported to me by other physicians. We see stones voided under probilin with a frequency entirely unknown under other medication; colic with the passages is usually light and may be absent, though sometimes it is marked.

Treatment of Acute Hemorrhoidal Inflammation. The methods of treatment that have been suggested (*International Jour. of Surg.*) are numerous and more or less effective. But the following gives pronounced success in practically every case. Twice daily and after every defecation the rectum is washed out with a quart of normal salt solution. Morning and night, after the solution has been expelled and the external parts dried, an anusol suppository is gently inserted. These suppositories, composed of an iodo-resorcin-sulphonate of bismuth, are the most effective means yet evolved for allaying hemorrhoidal pain and distress. The inflammatory process is immediately controlled, the pain of defecation is entirely removed, and the tenesmus and soreness rapidly disappear. If their use is persisted in and careful attention is paid to diet and the avoidance of constipation, a considerable majority of cases will be permanently cured without surgical intervention. The hemorrhoidal tumors grow smaller until they disappear and the tonic effect on the mucosa and vascular structures prevents a recurrence of the varicosities.

Pyrenol in Asthma and Pertussis. Dr. F. Walther, of Leipzig, finds Pyrenol to be chiefly expectorant, sedative, antipyretic and antirheumatic. It does not affect blood pressure and pulse, as almost all salicylates do; on the contrary, it is tonic and stimulant. Stomach and intestines are in no way injured even by its continued use; the appetite improves. All authors are agreed that it has no untoward effects of any kind. Its most striking results are seen in asthma, but it is almost as valuable in pertussis.

Some Practical Helps. Aconitine, veratrine and gelseminine, fortified or not, acording to indications, by digitalin and strychnine, produce equilibrium of the circulation, while atropine and glonoin are found useful in many cases. For general and not very great restlessness, without pain, the anodyne tablet of Waugh does the work, but cicutine hydrobromide is the "sheet anchor" wherever there is a tendency to convulsive efforts of the extremities or of respiration. Cicutine is synergistic to atropine in pertussis and to glonoin in spasmodic asthma. It works nicely with the children as a general calmative, fully replacing the disagreeable bromides. With it I have partially controlled the pains of rectal cancer and the convulsive movements of paralysis agitans. With gelseminine I have used it with excellent effect in congestive dysmenorrhea, together with the sitz-bath, foot-bath and saline laxative. Copper arsenite compound is a capital tonic sedative to the gastrointestinal canal, better after the use of the sulphocarbolates. Berberine muriate nicely follows the copper compound. Quinine arsenate, with hepatic iridin, leptandrin and calomel, makes the road easy in the cure of malarial troubles, providing you interdict the use of milk, eggs, coffee and pastry. Hepatics, with capsicin, hyoscyamine, and strychnine, give good results with alcoholics, first giving cicutine in full doses to quiet restlessness and delirium. Brucine is an advisable bracer for children, while calx iodata will do the work in spasmodic croup, properly administered in hot water, mustard pediluvia used as an adjuvant. Hyoscyamine and strychnine together nicely equalize the circulation in appendicitis after the acute symptoms have subsided. Byronin with aconitine for serous inflammation leaves nothing to be desired.— Dr. H. R. Powell in *Am. Jour. of Clin. Med.*

When pruritus ani is caused by a local eczema it is well to remember that the latter may be seborrheal in origin (*Am. Jour. Surg.*). In such cases other areas of the disease, as on the chest and, especially, the scalp, should be sought for; they will require attention also, in order to effect a cure.

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Fluid Extract of Squill. Dr. E. M. Houghton, of Detroit, Mich., from experiments concludes that acetic acid is not so satisfactory a menstruum as alcohol for making a fluid extract of squill. The therapeutic results obtained from the use of fluid extract of squill (United States Pharmacopœia, 1900) will be variable and considerably less than would be expected from the use of the 1890 preparation. It would seem desirable that physicians in prescribing squill should indicate that they desire the preparation of the United States Pharmacopœia, 1890, when they wish to obtain the usual therapeutic action of squill.

The Brake Fetish. Brakes are useful on the wagon, but no brake ever moved it an inch. No wagon ever earned a copper standing still in a bog. Because the brakes once saved us from running down hill to destruction is no reason for our unhitching the team and sitting for the rest of our lives in the wagon silently worshipping the brakes. Good as is the brake, the hold-back, better by far is the headlong career that at least carries us on, if we have to choose but one of them. But we don't. We appreciate at its full value the brake—but we rely on the team that pulls, the engine that boosts, and the automobile, the very embodiment of action itself.—*Am. Jour. of Clin. Med.*

Dupuytren's Contraction Treated with Fibrolysin. Dr. Teschemacher reports good results from the use of fibrolysin, the solution of the double salt of thiosinamine and sodium salicylate, in the treatment of Dupuytren's contraction of the fingers in diabetes. In one case, thiosinamine was injected into the arm with slight benefit, but the injections were frequently painful, and a small abscess formed on one occasion. Treatment was then continued with gluteal injections of fibrolysin, the contents of a vial, 2.3 c. c., being given at each injection. The first week but one injection of fibrolysin was given; the second week, five injections, and then daily injections were given, until the total number reached nineteen. The fibrous strands in the hand rapidly became softer, and with the aid of massage and hand baths almost complete mobility was regained. The injections were painless, and there was no abscess formation. Not all cases, however, react as promptly; in a few, no improvement was seen.—*Therap. Monatsh.*, Jan., '06.

Clavin in Obstetrics. A Labhardt, of the Woman's Hospital, at Basel, has investigated the action of clavin in a number of obstetrical cases. Clavin is an active principle of ergot, is soluble in water, and clinical reports are to the effect that it does not cause gangrene or convulsions, but stimulates the uterus to active contraction. It can be given by mouth or subcutaneously. In 11 cases of ineffectual labor pains, strong contractions of the uterus resulted in all but one patient. It was generally necessary, however, to repeat the usual dose of 0.02 (1-3 gr.) two or three times. Clavin was also used after childbirth in a series of cases, and the desired action was, as a rule, very prompt; in some cases it was necessary to repeat the dose or to resort to other uterine tonics. Clavin, the author states, also acts well as prophylactic against hemorrhage, where an instrumental delivery is contemplated. If compared with ergotin, it will be found that clavin is equally as effective, and possesses the advantage that it may be used even before expulsion of the fetus, and that it is entirely free from toxic properties.—*Muench. med. Woch.*, 1906, No. 3.

Typhoid Diagnostic. Dr. Fua (*Clin. Mod.*, Nov. 22, '05) is assured that the reaction given by Fickers diagnostic in typhoid fever is of equal value to that of Widal. Further, it is much more easy to employ, since this can be done without the aid of a microscope or laboratory, only a culture of the dead bacillus being required, whereas in Widal's test a fresh culture is necessary. It is an advantage that one uses a culture of constant virulence, which is not possible in the Widal reaction. He has employed Ficker's reaction in 28 cases of typhoid fever; in all of them he obtained a positive reaction which was confirmed by Widal's test.

He attempted to retain the reaction in other cases of diabetes and tubercle, but always with a negative result. He considers the simplicity of the test its chief recommendation.—*Brit. Med. Jour.*, Feb., '06.

Urotropin must be absolutely perfect. Many of the preparations on the market are of doubtful value, or are positively injurious.—American Journal of the Medical Sciences, May, '06.

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SELECTIONS

The climate of Hawaii is described by Dr. L. E. Cofer as one where every one may live constantly in the open air, the pleasures of those in good health are shared by health seekers. The medical "don'ts" which are necessary in so many really good climates are unknown here. Therefore the convalescent in Hawaii has not the identity which is so often his, and which proves not infrequently a barrier to rapid recovery from ailment. Unlike some climates it is not good for every disease to which the human economy is liable. For example, persons suffering from pulmonary tuberculosis will usually thrive far better in Colorado than here. On the other hand patients suffering from nervous complaints, kidney disease, etc., are justified in coming here from almost any part of the world. In short, I believe the influences in Hawaii offer the least resistance to bodily well being of any of the well-known health resorts of the world. Even if the meteorological findings are similar in other places, it is doubtful whether they make their impress upon the people as they do here.

Diphtheria. Freely admitting the benefits derivable from anti-toxin during the first four days of the attack, and also that by the use of larger doses we may, perhaps, save life after this period, there is nothing but intolerance in the wholesale condemnation of all other remedial measures. Any physician who has eyes in his head—and a nose in normal functional activity—can assure himself of the great benefits derivable from local antisepsis in advanced diphtheria of the nasal and contiguous passages; and the powers of calcium sulphide, strychnine and nuclein are so great that no one but a one-ideaed fanatic would refuse to avail himself of them.—*Am. Jour. of Clin. Med.*

Consistency. We like to hear people speak out bravely with the courage of their convictions. Even though they may be wrong, it is yet better that they speak bravely, for only by such free speech can the truth come to be known. There is nothing to be expected from the coward and the liar. Let us then applaud the consistency of these gentlemen by noting that they have publicly announced their refusal to attend cases of pneumonia, on the ground that they "know of no means by which they can favorably influence the course or termination of this disease." Then we shall at least have clear grounds.—*Am. Jour. of Clin. Med.*

Burdick (*Am. Jour. of Clin. Med.*) says that in treating stomach troubles the physician should first attempt to answer the following questions: (1) Might the symptoms be caused by any trouble exterior to the stomach, and if so, what? (2) Is the stomach normal as to size and location? (3) Is there food stagnation—in other words, does the stomach empty itself with reasonable promptitude? (4) Are the secretions normal or abnormal? (5) Are there evidences of inflammatory change or other morbid conditions of the mucosa? Preceding this inquiry he should ascertain the family history, the duration of the disease, coexisting affections, the presence and character of pain and effect of eating and of alkalies upon it, conditions of the occurrence of nausea or vomiting, location of tenderness, and the condition of the bowels. The routine attention to these points renders diagnosis and treatment much less difficult, and avoids mortifying mistakes.

Salisbury suggests (*Am. Jour. of Clin. Med.*) that drugs be given to be absorbed from the mucous membrane of the mouth, for which the simple alkaloid is better fitted than cruder forms. The intercepting action of the liver is thus avoided and smaller doses will accomplish the desired results. Digestion will not be injured and nausea produced. The paper closes with some remarks on untoward effects of some drugs upon the stomach, and circumstances delaying absorption.

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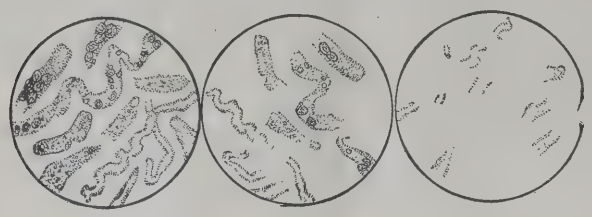

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SELECTIONS

We have received a copy of the Annual Announcement of the Southern Homoeopathic Medical College, and we are informed that it will give, in its coming session, a broader, more liberal, less sectarian, and more thorough course than ever before. In fact, it is said there are evidences to make one think the institution is about to take a new lease of life; the prospects of a large class of new students never before having been better so early in the season. Our hopes would be brighter if the sectarian name was changed.

Dr. George D. Kahlo, Professor of Medicine and Clinical Medicine in tne Indiana Medical College, the School of Medicine of Purdue University, and formerly Dean of the Central College of Physicians and Surgeons, has removed to French Lick, Ind., where he has accepted a position as physician in charge at the French Lick Springs Hotel and Sanatorium. The institution is to be congratulated in its acquisition.

Operative Technique and after treatment for Mastoiditis with Epidural Complications. Dr. W. Sohier Bryant makes the following conclusions :

1. The best results are obtained (*a*) by the use of the front-bent gouge instead of chisels or other gouges requiring the mallet, because it allows the convalescence to begin more quickly. (*b*) By closing the mastoid wound and allowing it to collapse and partially fill with a blood clot to promote union by first intention, thus shortening the convalescence. (*c*) By allowing the anterior flap of the wound holding the pinna to fall inward and backward and lie on the posterior and inner wall of the wound because this improves the post-aural cosmetic effect. (*d*) By avoidance of packing which causes the formation of a large cavity requiring a long time to granulate up.

2. The exposure of the dura mater is a complication of no special importance.

Bone tendencies, especially of the sternum and tibiæ (*Am. Jour. Surg.*) is frequently significant of sepsis.

Multiplicity of tumors of the breast usually speaks against carcinoma.—*Am. Jour. Surg.*

Do not advise extirpation of large glands in any particular region without making sure that they are not the early manifestations of leukemia or Hodgkin's disease.—*Am. Jour. Surg.*

The 37th Annual Meeting of the American Medical Editors' Association was held at Boston on June 4th under the presidency of Henry Waldo Coe, M D., of Portland, Ore. In its many years of existence this was the most satisfactory session ever held, not only in point of attendance, but the character of papers presented as well as the many applications received for membership. This association now numbers over one hundred and forty-five members, representing ninety-two of the leading medical journals in America. The following were elected officers for the ensuing year: President, James Evelyn Pilcher, M.D., editor, Journal of the Military Surgeons of the U. S.; first vice-president, Frank P. Foster, M.D., editor, New York Medical Journal; second vice-president, Charles F. Taylor, M.D., editor, Medical World; secretary and treasurer, Joseph MacDonald, Jr., M.D., managing editor, American Journal of Surgery, New York. The annual banquet held at the University Club was as usual the social event of the week. About 75 covers were laid.

In cases presenting the symptoms of acute epididymitis and orchitis, in which the history and examination fail to show any evidence of gonorrhea, it is always well to consider the possible presence of a torsion of the spermatic cord. (*Int. Jour. Surg.*) The symptoms of the latter condition often resemble those of an acute orchitis, namely, pain, swelling, marked tenderness, and more or less fever. The chief distinguishing points are that in torsion of the cord the pain comes on suddenly after physical exertion, straining, coughing, etc., and is often attended with marked depression and even collapse. The tenderness also appears earlier than in orchitis and is much more intense, while on examination of the cord a very sensitive swelling can be felt.

Chloroform should not be administered too close to a gas jet or gas stove (*Int. Jour. Surg.*) as its vapors are thereby decomposed, forming products which when inhaled by the patient, surgeon and assistants may give rise to disagreeable and even serious effects, such as nausea, vomiting, and pulmonary and renal irritation.

In the application of splints for inflammations of the knee-joint it is better to have them too long than too short (*Int. Jour. Surg.*) in order to secure the necessary immobilization. They should generally extend upward as far as the groin and downward nearly to the ankle.

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From a therapeutic viewpoint it is a great error to class rheumatoid arthritis as rheumatism (*Int. Jour. Surg.*) since in its treatment the use of tonics, a liberal diet, electricity, and massage are indicated rather than the free administration of the salicylates, which at best only relieve the pain.

In operating for empyema of the pleural cavity (*Int. Jour. Surg.*) while the place of incision should correspond to the situation of the pus accumulation, it is well to remember that the point of election is immediately in front of the posterior axillary line and on a level with the nipple.

In dealing with secondary hemorrhage from the rectum (whether bleeding vessels are tied or not) (*Am. Jour. Surg.*), it is better to tampon with gauze wrapped about a piece of stout rubber tubing, than with gauze alone. The tubing allows any further bleeding to show itself externally at once, it allows the escape of flatus, and affords means of introducing an oil injection to facilitate the removal of the tampon later.

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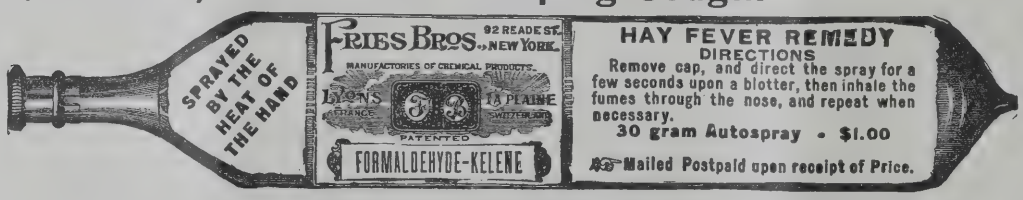
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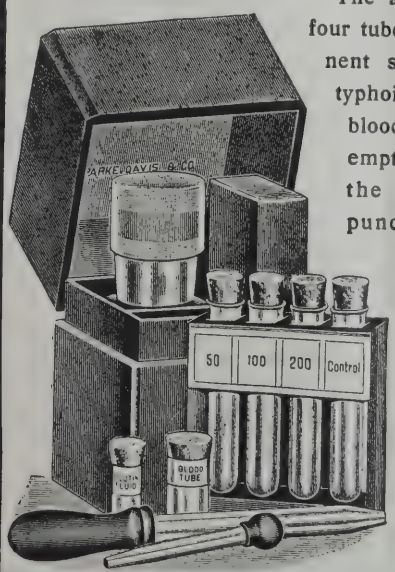

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Acute Ileo-Colitis. Dr. Albert F. Conrey reports a clinical case in which the onset was sudden with vomiting, but much pain and fever and the stools partly fœcal and containing undigested food. In a few hours the discharges were composed entirely of blood and mucus, preceded by pain and tenesmus. The stools were about thirty minutes apart, each containing less than a tablespoonful. Prolapsus ani was present and there was exquisite tenderness all along the colon; temperature, 104 degrees. The prostration was very marked.

Treatment.—As the pathological process seemed to be principally in the lower half of the colon, it was decided to treat the case altogether by injections. Glyco-Thymoline, one ounce to the pint, was the only drug used and was administered in the following manner: The solutions were made hot and at least a gallon administered at one time. It was injected high into the colon through a long rectal tube and early in the disease repeated twice daily. Before using the Glyco-Thymoline the colon was always cleansed with about two gallons of hot sterile water. After each irrigation four ounces of a somewhat stronger solution of Glyco-Thymoline was introduced high into the bowel and its escape prevented by compression of the buttocks. In a few days blood disappeared from the stools, which at the same time became less frequent, and pain and tenesmus ceased Mucus persisted in the stools for about two weeks.

Yellow Fever Prophylaxis in New Orleans, by Robert Boyce, M.B., F.R.S., has been published by Williams & Norgate, of London. It details in an interesting manner the methods successfully emploped to rid a city of the cause of a horrible disease, and shows the progress being made in prophylactic measures.

Plague. A hopeless case of this disease is reported as cured, with calcium sulphide, glonoine, and strychnia arsenate.

We have received the June issue of the "Medical Examiner and Practitioner," which contains the report of the proceedings of the meeting of the American Association of Medical Examiners at Boston. Life insurance examiners will especially find the report of interest.

Mosquito Bites. The extraordinary plague of mosquitoes in New York last season, says Dr. J. E. Traub, Attending Physician St. Luke's Hospital, led me to take up a series of investigations with a view to their alleviation. I found that a combination of the fixed aromatics, viz: Menthol, Thymol, etc., with alkalies gave quick relief. While looking for a combination of this nature, my attention was called to Tyree's Antiseptic Powder, a combination of Sodium Borate, Alum, Glycerin, Carbolic Acid, and the crystalline principles of Thyme, Eucalyptus, Gaultheria and Menthae, which has the advantage over the extemporaneous mixtures of being always uniform, easily soluble and readily miscible with talcum without grittiness When indicated as a dusting powder, a 10% mixture of Tyree's Antiseptic Powder in talcum, dusted on the exposed parts of the body will keep mosquitoes at a safe distance, or a solution of one or two teaspoonfuls to a pint of water, forms an unsurpassed lotion for the same purpose. This liquid also sprayed about rooms will materially aid in keeping them away. The manufacturer of Tyree's Antiseptic Powder is to be congratulated in having in this preparation a specific for the relief from these pests.

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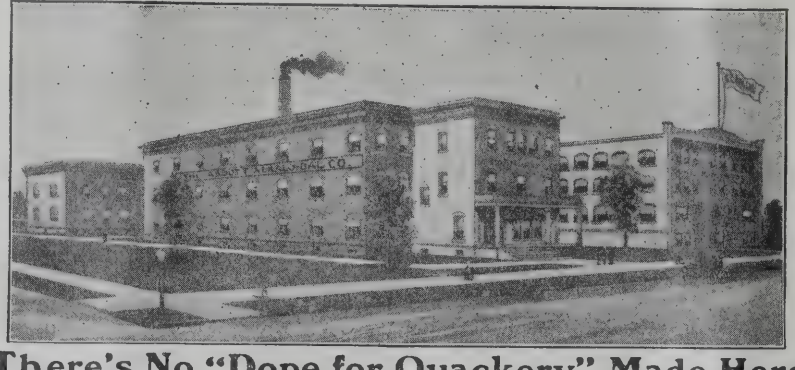

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SELECTIONS

The Importance of establishing a higher standard of preliminary education for Students of Medicine. Dr. Edward C. Register, of Charlotte, N. C., in an able presidential address before his State Medical Society, says:

"In the United States there has been a tendency for many years to increase the time devoted to medical training proper. This inclination has not been confined to medicine alone, the same influence has been noticed in all the professional schools. Possibly it is equally as conspicuous in the various lines of engineering and technology, or the departments that equip men for work in trade or commerce. In all these spheres of human activity the influence of modern scientific studies have been felt. If the physician wishes to obtain a perfect technical development, if he desires to keep in touch with the progressive ideas that are so much in evidence in all of the other professions, if he intends to be familiar with, and master the methods and principles of medicine and surgery, and if he expects to be able to think and to grasp complicated ideas, to be a leading citizen and a scientific physician, his training must be thorough, and it cannot be thorough unless he has a general and liberal knowledge prior to the study of medicine. Of all the students and members of the so-called learned professions, it is necessary for the physician to be trained in more kinds of scientific study than any other man. To begin with: He must know the English language; he ought to have a knowledge of the classics, and he must know something of Physics and a great deal about Chemistry, and, technically, his studies must include many different sciences. Every advance in any of the sciences of medicine or surgery increases the importance of a more perfect preliminary qualification. There is a belief, that may be correct, that this training, which seems to be so essential to the successful practice of medicine and surgery, has, in many parts of the country and among some of the students of this State, reached a satisfactory point. This conclusion is plausible when we think of the time that must be devoted to the study of all of these essential sciences and that when a student incorporates a college course of the old type with his technical education the greatest efforts of his life have been exerted before he begins the practice of medicine. To insist on a uniform high standard that includes a preliminary college course of the old type is not practical and will do harm. It is evident, therefore, that we have to deal with conflicting ideas as to the relative value of a high standard of general education or a high standard of the technical sciences or both. This conflict of ideas involves many different issues and deals with methods of much perplexity. When we compel our young men to give over four years of their time to professional training we are apt, in many cases, to observe that their general knowledge has been neglected. Especially is this so if the former is compulsory and the latter optional. It may be well enough to have a very high professional standard as it is here in North Carolina, but if we advocate a still higher standard and neglect the college or high school training, that is so essential to the professional man, we are apt to make a mistake."

Intestinal Antisepsis in Castro-Intestinal Diseases of Infants and Children. M. R. Dinkelspiel, M.D., ex-Resident Physician of the Philadelphia Hospital says: "To rid the gastro-intestinal tracts of debris and products of fermentation is one of the first, if not the first indication in cases of gastro-enteritis, especially in the acute dyspeptic or summer diarrhœa of infants. But unless this, together with the withdrawal of almost all food, is followed up by some intestinal antiseptic the trouble is liable to recur after the first few feedings. I know of no substance that approaches nearer to the production of as thorough an antiseptic condition as can be produced in the intestines than Glyco-Thymoline. Its wide range of usefulness extends throughout the gastro-intestinal tract, exerting a demulcent and soothing effect upon the irritated mucosa. I am accustomed to use it both by the mouth and the rectum, in the latter case using it as hot a solution as can be tolerated comfortably in from 10 to 15 per cent. strength, injecting it by means of a soft rubber catheter as high into the colon as possible. By the mouth I have it given in teaspoonful doses, slowly administered, every two or three hours and it must indeed be an obstinate case not yielding to this procedure. I can report many typical illustrations of the results that can be obtained from the use of Glyco-Thymoline in summer diarrhœa. During a hot spell I had an opportunity to try it, much to my information and gratification."

SELECTIONS

"Manna" from Harvard.* "Out of the eater came forth meat, and out of the strong came forth sweetness." Dr. Frederick C. Shattuck is Professor of Clinical Medicine in Harvard University, and his address on the Value of Drugs in Therapeutics is notable in several respects. It is notable first, for its healthy antinihilistic appreciation of drugs in the treatment of disease. While we believe that Professor Shattuck puts rather too narrow limitations on the value of drugs, still coming from a Harvard professor, we must be satisfied with small favors. The address is notable in the second instance for its having been delivered before a homeopathic body—the Boston Homeopathic Medical Society—thus offering us further proof that the chasm between the various medical "schools" is being bridged over, the bands of union becoming closer and more numerous. And, thirdly, and more important, the address is notable for teaching just exactly what we have been teaching these many years. Let us hear what Dr. Shattuck says. "It seems to me," he says, "that the leading therapeutic principles can be stated somewhat as follows:

"First. Do no harm. This principle seems to be well met by the homeopathist, who uses the infinitesimal dose. He does not harm save in so far as he may miss doing good. And it is still better met by our teaching—to start with small—not infinitesimal—doses of the best procurable drug and give it until results are seen.

"Second. Try to see as clearly as possible just why you give a drug, your purpose in giving it, whether as a specific, curative, palliative, or as a placebo."

Exactly what we have been teaching for years—give each drug only for a definite indication.

"Third. As far as you can, give a drug uncombined. This is a general rule subject to many exceptions. Rules, however, are made to break. They are our servants, though we too often allow them to be our masters. But in breaking rules we must use our brains, an exercise which most of us avoid as far as we can."

Another therapeutic truth, which we have been teaching for many years, and which we could not express in a better manner if we tried. We have always taught and asked the profession to administer drugs singly whenever possible, but not being faddists, not being wedded to one idea, we recognized that there are instances in which a combination of drugs acts better than any one single drug can, and in such cases we advocated a combination of drugs. We know that one drug may act synergistically with another, or it can modify its action, diminish its undesirable by-effects, render it milder in one respect and stronger in another—in all such cases we never hesitated to advise a combination of drugs.

But in this paragraph (three) Dr. Shattuck really says more than he perhaps meant to say. "As far as you can, give a drug uncombined." Why does he say that? Because he wants a clear-cut action. And this is a direct plea for active principle therapy. For opium is not an uncombined drug; to administer opium with its twenty odd alkaloids is almost as irrational as it is to combine twenty isolated alkaloids and administer them in one dose. Jaborandi or pilocarpus with its antagonistic alkaloids is not an uncombined drug. And when we want clear-cut, positive, definite action, we must administer the active principles.

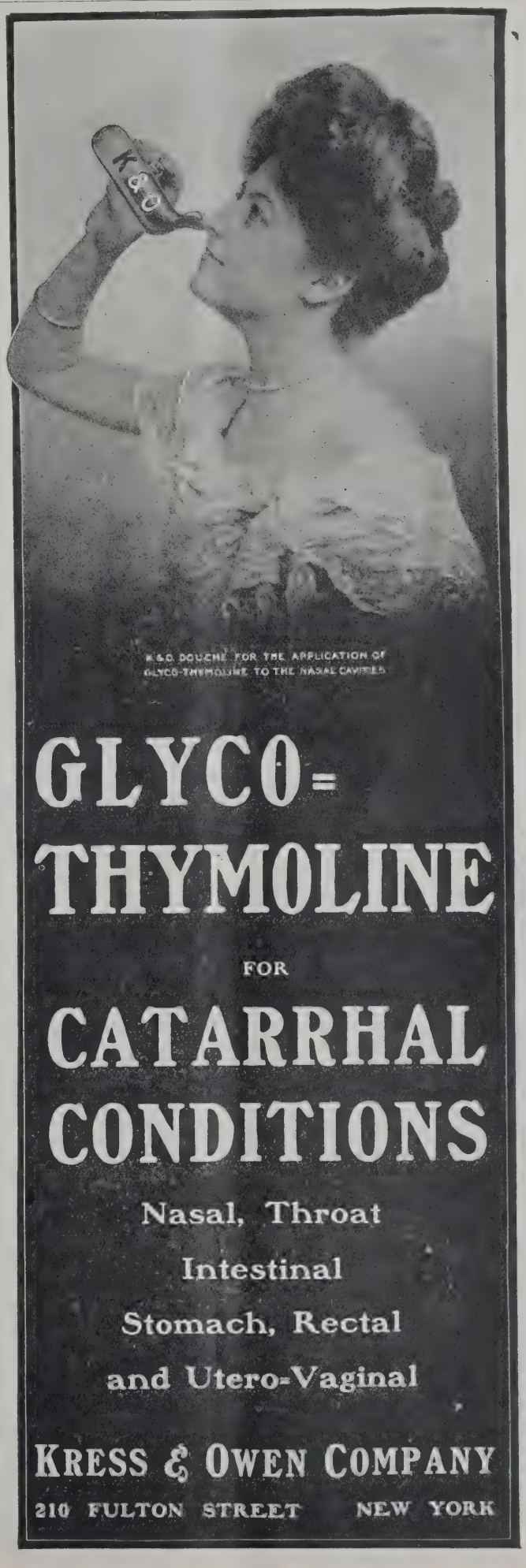
"Fourth (and last). In using an efficient drug, be as sure as you can of a good preparation, and then give it until something happens—either the desired effect or evidence appears that the limit of toleration has been reached, what is called the physiological, but what I should prefer to call the toxic effect. Disregard of this law is, I believe, responsible for many therapeutic failures."

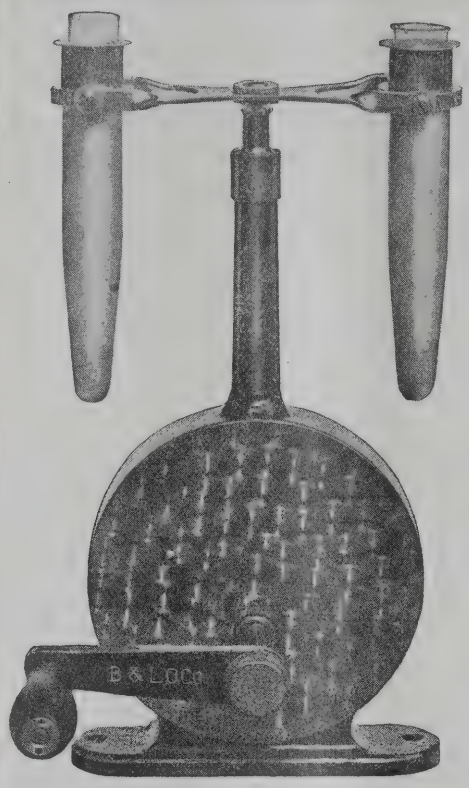
This sounds very much as if it had been taken from some issue of the American Journal of Clinical Medicine. Small doses frequently repeated until effect—doesn't this sound familiar to you?

We will conclude with the closing paragraph from Dr. Shattuck's address, which might be well heeded by some of our ultra-scientific physicians: "Scientific medicine," says he, "is open to the danger of going to the extreme of therapeutic nihilism, of disregarding the individual, of forgetting that while our knowledge is imperfect and the big thing is to find out the true nature and cause of disease, the present day sufferer demands, and has a right to demand, all the aid that our knowledge, imperfect as it is, permits."

In other words, this means that while we are hunting about for the ultimate cause of disease, we must not permit our present patient to die, but must give him all the aid, no matter from what source obtained, all the help that our present day knowledge—scientific or empiric—affords.

*American Journal of Clinical Medicine.





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SHALL SOCIAL EVIL INFECTIONS BE LEGALLY REPRESSED?

BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA, PA.

WE are not to-day and here to formulate statutes for the sanitary control and repression of social evil infections. To do that great service to humanity will require the skilled legal equipment of a broad judicial type of mind. Nevertheless, we are now on the campus of forefender thought, to present and discuss the absolute propriety and humane necessity of procuring a legalized right to defend the sons, the daughters, the wives and unborn children of our American families from the broadcast scourge of venereal contaminations that lasso human vitality aggressively and subtly through the sneaking byways of perverted blood, and of the tuberculoses, to the clammy drag-net of death.

The plan of venereal prevention by didactic exhortation or "moral education" which has been in vogue for a century of years, has tested its flacid régime of failure as a suppressor of venereal rot where it really exists. Even with trained minds and learned heads, society as constantly falls before the knees of the scarlet woman when the insistent tease of the sexual appetite will not forget its crave for an appeasing offering, with even avenging sacrifice, that shall be met at the altar of human passion.

We are not making or remaking the world as it exists. The forces underlying humanity are deeper and stronger than our availability to change them. While we have been sitting and drowsing around all these years, dreaming a palavered sentiment against legal interference with the squandered disorders of prostitution, venereal contagion has run a riot of insubordination till society is relatively garroted, from high to low, with the insidious results of impure sexual contact. How many men do we know who for all their lives have been absolutely free from a venereal blood contamination? How many women have we listened to who have not endured some form of sexual disorder that involved urethra, or vagina, or uterus, or ovaries, or yet adjunct physical equipment? Education? Does education annul sexual passion? Does it not intensify sensitiveness of desire? Does it not whet the appetite to know more, experience variety, tamper with the romance of extended risks? A very intelligent young musician of my acquaintance, a bunch of years ago, who was then "at home" with the handsome mistress of a local resort, told me that I would be simply stunned if he would then reveal to me the names of the professors of the faculty of a prominent educational institution who habitually frequented this house on intimate terms when there were choice girls there to entertain them! To my own knowledge, three if not four of those professors have since become tenants of their cold, silent abodes—and not because of old age! By their superior learning, they may have been capable of discerning between the diseased and the non-diseased woman. Whether they met their Waterloo of vitality by sexual venture or not will never be confessed. But while one learned in the sciences discerns the danger salient, the scores of others rush blindly to the bivouac of inoculation. It is for guardianship of impetuous swimmers beyond the foamy surf of the beach that vigilant life guards are needed along the sober shores of human reckoning. Too much courtesy of deference to venture is entertained in regard to the exemption of prostitution from official supervision. If we ever advance the sanitary hygiene of the house of promiscuous accommodation, legal control will supercede the hazardous complaisance of mere trust to chance.

It is the medical profession that most needs to be awakened from its dope of timid deference—to what? Has there been previous expression on the importance of sanitarily regulating the system of prostitution? Allow a few references. I will not glance farther back than to the great paper by Prof. Samuel D. Gross before the American Medical Association, if I mistake not, who in 1874 affirmed that "inasmuch as no preventive measures hitherto devised are at all trustworthy, and, inasmuch as the greatest risks of infection occur at houses of ill-fame, the only way by which these risks can be reduced to their greatest minimum, is by the legal regulation of prostitution, a remedy that could not fail to be productive of vast good in promoting the national health."

As was anticipated by Professor Gross, his outspoken appeal was made the text of opposition. The London *Shield,* published by the National Association for the Repeal of the Cantagious Diseases Acts, also *The Alpha,* published by The Moral Education Society, Washington, D. C., especially used their pages against the views of Gross, but with more hysteria than logical sense.

Dr. J. Marion Sims, President American Medical Association, in his address to the association in 1875 earnestly proposed that health boards be established in towns and cities; these boards to be empowered to exercise sanitary control over all contagious, communicable diseases, including syphilis. Dr. Sims also was deemed worthy of criticism by the Rev. J. P. Gledstone, in the London *Shield.* Rev. Gledstone subsequently visited this country as a delegate from the British Continental and General Federation for the Abolition of Government Regulations of Prostitution to assist in organizing branch societies in the United States. This "International Association" expended during the first year of its operations upward of a thousand pounds, in publishing periodicals and pamphlets, sending delegates to various parts of the world, and establishing branch associations. Mrs. Josephine E. Butler, of Liverpool, was the central moving spirit of this international crusade of fanatic opposition to government repression of the most general and most tenacious contagion known to the world, and that a preventable contagion! It cannot be supposed that Rev. Gledstone and the battalion of ambitious women who marched with him had ever taken notes along the actual lines of life that would afford them practical knowledge of the repulsive and insidious diseases that result from prostitution. A Spartan band of sainted women and ministers are exactly adapted to the elaboration of sentimental quibbles over great medical problems of which they know practically nothing. Here is Rev. Gledstone's substitute for legal restraint, as published in a letter by him dated January 21, 1877: "Looking at the whole question of prostitution, I am satisfied that moral and voluntary agencies are the greatest for bringing about a change. Among moral agencies, I set first the inculcation of purity by fathers and mothers; then by teachers, clergymen, etc.; the adoption of more kindly, wiser, and more loving agencies for the rescue of the fallen. I should like to see some homes of an entirely self-supporting kind. Then

I would like some doctors to begin and extend their teaching. I should like them to require or recommend continence in their books and advice. The world's experience is not favorable for making hard laws for prostitutes. I do not think we do much, if any, good by shutting up brothels. The house is shut up and the women are turned out; but the women are not changed in character; neither are they hindered from finding for themselves a home in some other place; while they are in the body they must live somewhere. The only sensible plan, as a legal plan, seems to be to close the house where they live, as a brothel; in fact, take possession of it, and allow the women to remain in it until they could find employment, or enter rescue homes, or return to their friends, in the meantime allowing the landlord no rent."

And there the Rev. Gledstone left us. So far as our American cities are concerned, he and Mrs. Butler won their useless campaign. Their plans have been tested for thirty years longer, nothing practical has been accomplished in the way of reducing the number of women engaged in prostitution, and, meanwhile, the spread of venereal infections has been tremendously increased among undefended population. As to some of his major points, the moral inculcation duty has had very considerate vogue and should never fall away from its field of service. But while one has been saved by it, a hundred have entered into the scorched paths of sin and a thousand have contracted infection. There has been no arm with which to reach and reduce the physical contaminations interchangeably spread from the fast-house. To sample by Philadelphia, loving rescue agencies have been and are in constant activity. I would like to see the present Mrs. Russell Sage apply some of her millions toward founding the Rev. Gledstone's "self-supporting homes" for the voluntary tenantry of fallen women. He makes no reckoning with their propensities, fondness for gayety, penchant for recklessness, aversion to manual toil, hence how would he succeed in detaining these thousands of impulsive girls in voluntary servitude or work in these "self-supporting homes"? Nine-tenths of them would "fly the coop" in less than a fortnight—unless too much broken in health to do otherwise. The rescue homes in Philadelphia are resorted to by a very minimum proportion of girls and women in fast life—and it is the testimony of matrons that the women who apply are in impaired health and too run down to continue their evil vocation. After the temoprary monotony of the home, many escape to return to their former haunts until claimed by the shelter of the city hospital. Again, the rescue homes will not include with their families such girls and women as, on examination, are found to have "the venereal disease." Where then are the arrogant opponents of legal control to win out any considerable good for the fast woman and for society at large? Suppose the plan be tried of closing the houses of prostitution "and the women allowed to remain until they could obtain employment." How many weeks or months would these thousands of women need to be furnished with the reasonable necessaries of life while endeavoring to find employment that would afford them decent livelihood? Or, apply the problem to the city of Paris, where a celebrated physician and careful reckoner estimated that out of three thousand women who were plying the most debasing and deadly of trades, only thirty-five could in any other way earn a living at all! Hence, again, how about robbing landlords of their rent because their houses shelter these degenerates who must live somewhere or be killed!

The most violent objectors to legal sanitary surveillance of girls and women in miscellaneous life of brothels have been among those who ran the late rumpus of exalted views in regard to "women's rights." In the necessary and repeated medical examinations of the erring women that the law would impose, and the resulting purification from dangerous disease, these objectors imagined they saw a hideous bugbear of degrading oppression. Such doctrinaires evade the fact that the public prostitute has reached the depth of her moral and physical degradation when she offers herself as a human medium of sexual merchandise to whoever will pay the price; that from the hour when she has contracted disease she becomes a continuous source of disease to others, and the medical inspection that leads to her cure offers alike to humanity and herself a blessing without degradation; that daily large numbers of good and virtuous women, single and married, cheerfully submit their cases to their physicians for speculum examinations, and thereby experience no moral humiliation in employing such rational means for the relief of their complaints as may be available. These fastidious apostles of woman's sanctity of physical rights are not aware that the female habitues of the brothel propose that the introitus of their sexual organism shall serve as the open door to trade profits, and have passed the stage of sensitiveness to medical investigation. About thirty years ago I was invited to attend a clinic in the women's ward for specific diseases in the Philadelphia hospital. It proved to be not a public clinic—myself being the only spectator present to view at close range the speculum examinations of the score of cases under treatment that day. One by one these women walked in after each other with the air of nonchalance, placed themselves upon the examing table, were prepared and the speculum introduced by the female attendant, received the treatments applied by the physician, and retired to give place for "the next" without a single flush of embarrassment. I thought the female who had aided the doctor was a professional assistant. What then was my surprise when the nineteenth case, instead of retiring, stood to one side and the assistant herself mounted the table to be attended to like as had all the rest! If a sensible woman has disease of private nature, she wisely prefers rational treatment of the same, rather than wasting time in mincing fudge over a quibble of "propriety." The fastidious objectors to legal control seem to forget that a majority of women who lead abandoned lives are ignorant, profane, intemperate, shameless, heedless as pedlers of infection. Matrons and lady managers of Magdalen Homes have told me that a majority of those who apply at the homes cannot read or write, are addicted to strong drink, are broken in health, and must, therefore, choose between entering a Home or the almshouse.

Our esthetic objectors should also be reminded that after affording the woman engaged in prostitution unrestrained liberty to spread contagion as long as she is physically able to do so, and through declining health she is compelled to desist and go to some hospital, the first step toward her relief is the identical medical investigation of her condition so inconsiderately denounced as personal indignity. When found infected,

she is detained in the syphilitic wards of the hospital until she is relieved or dies. If she drift into the almshouse hospital—that great municipal seine of human wretchedness—there the same course of sanitary inspection must be pursued. Yet again, to show squeamish objectors with what a monstrous evil society is confronted, let it be borne in mind that if the fallen woman apply for admission to one of the charitable Mission Homes, her case must yet be subjected to the same medical examination about which the social purity folks primed their howl for repeal of contagious disease acts. If there is room for her, and if found free from specific contagion, the erring woman is permitted to remain in the Home; but if she be infected, she must first be sent to the almshouse to be treated before she can become an inmate of the home. In all candor we are entitled to question on which side of the dilemma is the erring woman made the recipient of the greater consideration? Shall she be brought early under the discipline of sanitary control, and thus promote her own and the national health? Or shall we protect neither until the woman is physically disabled to spread her contagion, but afterward place her under medical surveillance? Cast up the sum of profits, and make the division. Her rights to exemption from legal exactions have been strenuously declaimed by the timid reformers who know as much about actual hygiene as a song-bird knows about the malaria of a morass. "Man-Afraid-of-His Face" should be the label on these talkers. Do not the hospital, almshouse, Magdalen Home exist and operate under Legislative Acts? Their regulations are enforced by authority of law. The woman who comes under their protection or jurisdiction does so as a subject of law—as much so as she would by the Statute of Registration contemplated by an Act for Legal Regulation of Prostitution. As it is, does it not turn out that legal or compulsory inspection obtains in every institution where fast women may abide or be served outside of the brothel or house of ill-fame of whatever grade? It would seem that fastidious talkers and writers who can estimate the picture on one side of the problem only, lack a substantial sense—"the horse sense"—of the social and national sanitary interests. Standing off under a cloak of sentimental excuses will never arrest contagion, never relieve the world of gonorrheal catarrhs and venereal sores, its tuberculoses and cancers, all of which are terribly on the increase.

Special deference is contemplated by our timid profession in regard to what fanatics have termed "legal recognition of prostitution" embraced by the idea of "legal regulation of prostitution." But since, like the evil of the sale of alcoholic drinks and many other evils, the evil of prostitution always will exist in some form, is it not common sense that the law should take cognizance of the fact, and interpose such regulations and restraints as shall best subserve the public welfare? The fact that the laws recognize the existence of any evil that affects the public welfare, and aims in letter and spirit to control that evil in some rational way, does not thereby make said laws criminal participants as the Butler-Gledstone crusaders labored to argue. Like prostitution, drunkenness is a perpetual evil; there always are men and women who, from some natural cause, will resort to intoxicants. Mere prohibition has never suppressed indulgence in spiritous drinks. How much practical sense would strenuous prohibitionists represent who made public outcry that any law which would authorize registration, a license tax, and systematic regulation of saloon business in community thereby became *particeps criminis* with the evil of liquor dealing? Law must recognize the certainty that the mischiefs which it cannot obliterate, it must in reason regulate for the welfare of society. Without law there is neither offence nor judgment. St. Paul says: "Moreover, the law entered that the offence might abound; . . . what shall we say then? Is the law sin? God forbid. Nay, I had not known sin, but by the law." Law will not exterminate the social evil; but by the regulations of law, the sin of contamination may be put into most commendable subjection. Granting, as we sadly do, that many unfortunate women lead lives of shame in consequence of harsh necessity or cruel betrayal, it should not be forgotten that when their backs are turned upon the good and worthy of their past, and they take refuge with the evil directly, they are walking into serious danger, and the remedy should be applied right where we find them, if we apply it at all. They will not first come to us; but we can go to them. Shall we not even say to them that though they have suffered betrayal and been abandoned, yet the law will mercifully follow them with the protection of her sanitary provisions, and extend to them such immunities from suffering as it is in her power to secure? Inasmuch as this article is mainly a review of the attitude of regulation where suppression can be absolutely only spasmodic, and is altogether an impracticable proposition because of the unquenchable impulses of human nature, I shall not quote latter day expression of recoiling sentiment from the scare and awe of the late anti-legislation crusade. We should depend on the riper judgment of men like the elder Gross and Sims, who were fully qualified to apprehend the problem of national health and welfare. But that it may awhile survive the waves of forgetfulness, we repeat from an editorial in the *Medical and Surgical Reporter* for July 31, 1897, anent venereal disease: "The *Reporter* does assert that the hygienist must regard the control of venereal disease precisely as he would that of any other communicable malady. That kind of morality which keeps its head erect by virtue of a raw-starched shirt bosom and stand-up collar habitually asseverates that it is immoral to deprive vice of its possible dangers. Without discussing this dogma, the *Reporter* does not hesitate to assert that the duty of the physician is to *cure, relieve and prevent* disease without reference to ulterior considerations. The physician must be actuated solely by the intent to save life or to cure disease. Physicians are constantly laboring to save or prolong lives which, so far as human wisdom can determine, are detrimental to society as well as burdens on those more immediately connected. The logic which forbids the physician hygienist to attempt the prevention of danger arising from indulgence in lust, is incomplete until it also concludes that the physician therapeutist must not cure the consequent diseased conditions. Aside from the duty peculiar to physicians, are reasons which fully justify prophylactic measures against venereal disease. The act of Congress which determines exposure to venereal infection is immoral, is so only when potential for evil in the social economy. It is the physical expression of a natural instinct, an appetite as normal as the craving for food or water, for oxygen or for exercise.

"Nevertheless, social ethics can admit no excuse for unrestrained response to the demands of this appetite, because as soon as we conceive man a morally responsible being with environments which bring him in contact with more than one of the opposite sex, so soon does the necessity for restriction become evident for the preservation, indeed, for the very existence of the social structure. In regard to mitigating the consequences of incontinence, two postulates are commonly made: First, sexual transgression is inspired more often by relative coincidence than by moral obliquity. Second, severest ultimate consequences of wrong-doing are visited upon the innocent and even the unborn. The strongest plea for bringing venereal disease within the province of preventive medicine is because of the ultimate disastrous results to the innocent. Gynecologists estimate that nine-tenths of pelvic inflammatory diseases in women, excluding cases due directly to accidents incident to parturition, result from gonorrheal infection. If there be any question as to the righteousness of seeking to spare man or woman the possible consequences of yielding to the *promptings of natural instinct,* there can be none whatsoever to regarding infected parties impersonally as direct agents in transmitting loathsome disease to others, especially through legalized relations to unsuspecting virtue and potential posterity. Every means to prevent such spread of contagion should be exercised. For the sake of the race unborn, if for no other reason, venereal disease should be exterminated if any efforts of the profession or public can accomplish the task. The social evil has prevailed since the fall of humanity and has grown apace with the increase of mankind. It has disintegrated kingdoms, it has submerged empires, and its flood tide marks the ruin of nations. Society has as yet built no dams efficient to restrain it. But incredible progress will be made when venereal disease shall be controlled through effective measures devised by science, enabled by wise legislation and enforced by public opinion. This is possible." The foregoing editorial expression is a logical and powerful article by Dr. H. H. Kynett when conducting the *Medical and Surgical Reporter* in 1897. I am glad to see it reproduced for enlightenment of the profession and the world.

Agitation of the subject of legislation roused an interest in the minds of women for the welfare of the fallen never before experienced. Some good always results from the study of great subjects—and an impromptu prejudice often reverses its position on more mature examination. We always welcome every moral agency set in operation to help reclaim the erring. Educating both sexes in regard to the legitimate functions of their physical natures is wholly commendable. But while that deters one from unwise venture, it stimulates another to enlarge by experience what has been learned by precept. Familiarity of knowledge does not keep the sexes apart. When the ordinary moral agencies fail, legal means should interpose between safety and danger, and thus legal means may become moral agencies also. Refuges in America prove too limited and too insufficient. To reach the need of the age something more direct and arrestive is necessary. Until recently the medical profession has been inexcusably, feebly reticent in regard to any positive remedy. Doctors! While doctors have maintained veiled faces in avoidance of broaching a disagreeable subject to ears polite, women writers and speakers have not shrunk from freely handling this subject with their pens and upon the platform. They have unblushingly labored with polished skill to capture the adherence of church ministers who never analyze a problem of physical hygiene or social degeneracy. Women hobbyists never crow over men so loftily as when they sway men's judgment with a drawn bow of argument and throw the arrow of coquetting smile over their fan of opinion. Where are the doctors? Who are the men that quail before a frown of sentimental rebuff, shudder in face of a shrunken fee! Millions sick with subtle corrosions of venereal disease! Nobody brave enough to hold up the healing signal to bitten humanity! Are our thousands of medical practitioners in America really doctors, while failing the rescue of the race here from the venereal corruption that is increasedly spread abroad through prostitution, largely reinforced by immigrants from stolid foreign countries? Can we not begin to wake up to a higher sense of professional opportunity and obligation? If we entertain broad sanitary convictions regarding the social evil, but fear to declare them, then what great cause has anything helpful to expect from our mission in the world? The evil is monstrous. Our responsibilities are proportionate to this evil from which we cannot hide. The ignorant and innocent people need more and better knowledge. Help them to it. Public sentiment, awry with qualms, deserves from us a more elevated enlightenment and relief. Are we here merely to administer a pill or a tablet and take a fee? Even a quack can perform that primitive stunt in common medicine. We are entitled to higher privileges in the service of suffering population.

The eminent Prof. Gross, clearly comprehending our national dangers, fearlessly placed himself at the front of sanitary progress for the betterment of the people. The eminent Sims hastened to join Gross in resisting the ravages of venereal contagion. Both veterans have since crossed to the invisible beyond. Are there not others capable and willing to champion a crusade for the rescue of the innocent women and unborn children of America from a preventable physical and moral scourge? The heart to heart question for courageous medical minds is not "What will others do?" but "What will I do?" for so worthy a cause? Six-tenths of those who suffer from results of gonorrhea and of syphilis grope in the fog of ignorance in regard to the true cause of their nerve degeneracy, their mental tribulation and physical discomforts. And are we to stoically stand and look on while our patients are doomed to the knife and extortionate fee of the specialist operator—live or die? Objects of tender love? Subjects of winsome regard and anxiety? The plan proposed by the eminent Gross embraced a number of the features of the St. Louis ordinance. It outlined a bill uncomplicated and direct; enforced by few officers; prohibited city councils and police from serving on its board of managers; examining physicians to be moral and educated men, appointed by the Board of Public Charities; officers and physicians to be scrupulously conscientious in the discharge of duties; inspections to be regularly made; all women found unclean to be placed in quarantine, or under proper restraint; the law to be made to apply to males as well as females; sailors arriving in port, and soldiers stationed in barracks, to be inspected, etc. Dr. Sims proposed that syphilis be classed with smallpox and other contagions, and with them

be brought under the control of boards of health in towns and cities; these boards to have "the power to search out the abode of syphilis, and to send its victims to hospitals for treatment." He opposed "class legislation" and "legislation that looks to licensing" as measures that would not meet popular approval. The plan of Dr. Sims stopped a step too short.

It would be a great service could our boards of health successfully search out the abodes of syphilis, and suppress venereal contagion. But could said boards succeed without registration of those engaged in prostitution? Moreover, in the cases of persons who engage in the traffic of ill-fame as a means of money gain, would it be an outrage on proper society to assess the institution of social evil for the support and medical treatment of its infected women? Class legislation applies its control over the liquor trade, subjects pupils and teachers to physical examinations, why should the traffic of prostitution be exempt from expense and supervision? Most lines of decent business are taxed in conjunction with license. In prostitution a special class offer themselves as merchandise. The cans of the milk dealer must open for inspection at any moment. Perhaps thirty-one years ago the American Medical Association, at Louisville, was furnished the report of its committee on the subject of legislation against the extension of venereal disease. I will abridge said report for present day readers. "The committee appointed to suggest 'proper legislation to prevent the spread of syphilis' beg leave to report that, in their judgment, there is no possibility of stamping out syphilis until all the nations of the world are protected by proper legislative measures. Great difficulties, unfortunately, surround the execution of laws having for their end the prevention of syphilis. . . . We can therefore only hope to obtain the passage, at first, of enactments having in view the regulation of persons engaged in the military and naval service of the government, and also those ordinarily subject to the control and supervision of the police and municipal authorities of cities and large towns; though, in the end, we are convinced that the extension of this control and supervision to the whole civil population will be the inevitable legislation of all countries. Even partial legislation will do much good, for syphilis, however and whenever it originates, fixes itself in great populous centres, and has its habitat in the abodes of poverty, filth and vice, rising, in the end, from these conditions to the highest degree of social life, and contaminating whole communities in its march. A law similar in its purposes to the 'Contagious Disease Acts' of Great Britain, properly adapted to the peculiar temper and genius of our people, and drawn with special reference to the character of our State and national governments, is, we think, both feasible and practicable; and its passage can be secured, we feel convinced, if the medical men of the nation are invoked to use all their personal, social, and even political influence with the legislatures of the different States and the national government, the latter to reach naval and military stations. From report of select parliamentary committee we learn that the operation of said Contagious Disease Acts has been followed by the very best results. Not only has syphilis decreased, but prostitution has diminished, and its evils been much lessened, both in a moral and physical sense. Many women improved in health —large number restored to virtuous, useful life. In adapting the British law to this country, it might be greatly amplified, as it does not extend to jails, houses of correction, etc., nor does it include seamen and lewd women coming in vessels from foreign ports. One sailor may contaminate half a dozen women the few days he is in port, and these women may in turn inoculate hundreds of men. Lock hospitals are not provided for by the British law, and these are indispensable for the proper working out of any plan to prevent the spread of syphilis. They should be established in the cities and large towns that are made subject to the requirements of the law, and at the military and naval stations of the government. It has been suggested that a mere enlargement of the powers of the health boards of cities would be sufficient to secure the desired end of legal enactments. To constitute ground for State interference, it must be conceded that the evil is of such magnitude as to endanger the welfare of society at large, and that it cannot be reached by ordinary social and civil means. Can it be doubted, in the present state of our civilization, that syphilis is such an evil, and that, if its progress is not arrested, it will lead to the general decadence of the race. In conclusion, your committee recommend to the association that a committee be appointed to prepare proper bills to be submitted to the different legislative bodies of the country, and that the members of the profession be urged to use all their influence to secure their passage."

Since then thirty years have been lost by inaction through timidity, and the penalties of progressive infection have cut increasedly wide and heavy swaths through many of the uncounted sufferers to whom no preventive hand has extended itself. Besides the historic data that I have already reviewed, as a loyal disciple of the eminent Prof. Gross, whose memory he reveres, the present writer nearly thirty years ago in medical print asserted his adherence to the life-line of suppression of venereal infection, by going rather farther into the plan of prevention than had Prof. Gross. We learn as we proceed in thought. Since the reduction of the evils of prostitution are the legitimate objects of human charity, there is no reason why legislation should not include restrictions for the male as well as for the female. I pity the girl in evil life who becomes exposed to the filth of a gonorrhea or the infernal scorch of a syphilis from a rake of manhood because he has bought his privilege to her accommodation. It cannot be just to discriminate in the man's favor when we balance the merits of privilege. Admitting the fact that in many individuals of both sexes an imperious appetite for sexual commerce exists, that passion confers no right for either sex to infect others. Confronting the recklessness of human nature, there should exist the official right to inspect sailors before landing with their keen desires; and of soldiers, including officers, whenever the personal health of women they would seek would be involved and the public good thereafter be endangered by the omission of rigid inspection with power to promptly quarantine the diseased. These inspections for sanitary ends could be made by the ship surgeon and the regimental surgeon, respectively; or by quarantine physicians and medical officers of public health boards. Subjects of infection to be detained in quarantine attendance or in hospital until cured. From some army experience, the writer observed that officers were subjects of venereal diseases in ratio with private soldiers. Sexual passion is

no respector of military rank. Knowledge of sexual nature and function, especially the fearfulness of venereal diseases should constitute a requisite of the education of youths as human beings who must fill a personal niche in the world; but above all that should be suspended the royal rod of the law. There is law for everything else; why should erring sexuality be neglected? To reduce the temptation to prostitution and protect humanity from specific disorders, the world needs legal authority to apply interference directly to these evils. The enactment could be made like local option, to apply to certain counties or States. Health boards for each county could operate as subsidiary branches of a State board of health to include control of venereal contagion. Sex should not debar a properly qualified individual from serving on these boards. Thus let women of high moral standing increase their practical interest in fallen women along the lines of their own sex. In many places, an efficient woman physician assistant to the medical inspector might take charge of many examinations of females. Officers should be chosen to make correct registry, from time to time, of all houses of ill-fame, and their mistresses, and of all women engaged in prostitution within the limits of the jurisdiction of said officers. All persons keeping houses of ill-fame, houses for assignation accommodation, should be systematically taxed, as a condition of license, for the purpose of providing continuous revenue toward the maintenance of industrial homes and hospitals in the vicinity of their business. The industrial home and hospital should be a civil humane institution, embracing in its organization the combined advantages of the refuge, the home, the school of correction and industry, and the hospital. Such an institution could be made one of the noblest blessings of civil government. Appropriations should be made by each county for founding such invaluable institutions. Sanitary inspection of all girls and women following the vocation of the prostitute should be made at least once a week, and whenever any are found to be diseased, they should be required to report in person at once at the industrial home, where they would receive needed medical attention, would be cared for physically and morally, be engaged in some useful occupation under instructive direction, and to remain until cured of disease; if reformation be possible, where they should stay until reclaimed, and be either restored to friends or aided in gaining the opportunity of leading honorable lives. On due examination, each registered woman found free from infection should be furnished by the medical officer with a certificate of health with printed date stamped thereon, and accuate record of the same should be made for official reference. Any woman found plying the vocation of solicitation or promiscuous accommodation of males without such properly authenticated certificate, should be liable to immediate arrest for endangering the public health in violation of law. Each woman in fast life who holds a certificate of health to be required to surrender the same to the official at the time of her ensuing examination. The public health board should be fully empowered to ferret out concealed haunts of prostitution, where the business is secretly conducted with the aim of evading the controlling law, and contagion more certain to be spread among the male and female habitues of such places.

There is no room for the sizzle of sentiment in dealing with the condition of prostitution. Women who follow the business of ill-fame for the money they can realize from their patrons for transient accommodation, naturally become venturesome and indifferent to the protection of males from disease. Such women often ply their trade while more or less under the influence of intoxicants. Furthermore, disease in the male may be frequently so concealed that the woman, through lack of expert knowledge, would not detect her own danger, though earnestly desiring to do so. Therefore, to arrest the spread of venereal diseases, males should be held as responsible as are females. The legal enactments under consideration should provide that each and every youth and man who resorts to any house of ill-fame for the purpose of sexual intercourse, or who consort with any woman practicing promiscuous sexual relations, shall present and be required to present as testimonial of sanitary health, a properly authenticated certificate of freedom from specific disease—such certificate from the health board official, or from some other legally qualified physician of recognized standing, to be considered evidence of freedom from contagion not longer than ten days including its date; each medical officer to keep correct record of each examination for exactness of data. Any male or female found guilty of fabricating, or making use of a fraudulent health certificate, or otherwise evading the requirements of preventive legislation that apply to them, to be liable to arrest and penalty of fine for endangering the public health; all fines to be also appropriated toward support of the industrial home and hospital for women. If asked why I do not propose to tax the man who patronizes, besides the woman patronized, my reply is that expenses should be assessed on those who conduct the business for its money profits. Of course, the industrial homes and hospitals for the reduction of contagion would be in line with other institutions for the support of State appropriations and charitable bequests. While I favor extending to the erring defence against the infections of venereal poisons, it is not anticipated that the life of the fast woman shall be all smooth and gilded. If the business become too unprofitable for the woman to pursue it, she will be more willing to abandon it. The road of danger should be narrowed with restraints and obstacles. While receiving medical aid in the hospital department, these tenants of the industrial home might be taught to weave cheap and narrow fabrics, to make garments, to sew the uppers of shoes, to practice good housekeeping, in scores of ways learn how to lead useful and decent lives. The only effective way to reduce venereal contagion in the world about us is to arm the law with the right to reach straight to its centres and corral its hotbeds of vice, without squeamish fear or servile favor, when humanity at large is suffering day and night from its implacable but needless scourge. There is something that heroes are made of.

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Lumbago.—Farquhar (*Brit. Med. Jour.*, Mch. 3, '06) uses the Ointment of Tartrated Antimony (B. P.); it must be well rubbed in. Croton Oil Liniment used in the same way is helpful in cases of chronic sciatica. For the stiffness and gnawing pains characteristic of these affections remedies are often so disappointing that these suggestions of Farquhar should be adopted.

THE SEX CYCLE OF THE GERM PLASM.

Its Relation to Sex Determination.*

BY T. E. REED, M.D.

PART I.

PRIMITIVE man has been found to theorize in his fanciful way upon astronomical phenomena long before it occurred to him that there was any need for an explanation of some manifestations of even more intimate connection with himself; these are the expressions he constantly sees in himself and about him of the life force. However, as knowledge increased the external world was separated in the mind of man into two categories: the category of living matter and the category of matter which as far as could be seen had no innate power of reacting to its environment or of reproducing itself. We know that even in the mists of prehistoric times, or with the primitive peoples of any age this sharp distinction between the living and non-living, organic and inorganic matter has almost instinctively been drawn.

We do not wish to be here understood as holding that there is such a real distinction between these two phases of the material world. Some recent discoveries would seem to convey hints that this barrier through which a break has so long been sought, and sought in vain, may be broken down. We are considering now the more apparent distinctions between living and non-living matter. Of these the one which possesses the merit of being the most easily applied as a test, is the power possessed by all living organisms of reproducing themselves.

There are several ways by which this flow of reproduction is sustained as an unbroken and eternal stream. These we may refer to later, but at present it will suffice to call attention to the well-known fact that with all the higher forms of animal life this is without exception accomplished by means of sex differentiation.

We are now face to face with one of life's mysteries and consequently one of the most intricate problems of biology—this question of sex, its manifestations, its determination and its origin. Notwithstanding the now well-known fact that next to the motive of self-preservation the motive of self-perpetuation may be recognized as forming the principal basis of activity in all organisms, and even in man himself, sex manifestations were not for many centuries thought of as constituting any problem whatever. These phenomena were in fact like the regular succession of night and day, so obvious and so constant that they were taken for granted.

With the problem of the origin of sex, other than in the consideration of what it may have to teach us in respect to the determination of sex, we will not deal. It is intimately connected with the question of the origin of life itself, and probably will only be completely solved with the solution of that problem. Could we correctly define just where and why sex differentiation originated, the question as to what determines its manifestations would no doubt be no longer one to which an answer is wanting.

Elaborate investigation of the methods of reproduction in the primitive forms of life have been of use in clearing away many of the misconceptions which have surrounded this problem, but their value has been largely of a negative character—they have eliminated for us the non-essentials. Many of their results have been so remarkable, and at times such strong experimental evidence has been brought to the attention of the scientific world that the problem seemed to be near a solution. When the results which were secured from nutritional control in the *Daphnia* or the Lepidoptera were sought with the higher animals, or man himself, they have almost without exception been found wanting. All these theories and experiments have eliminated many factors of the equation. They have placed signboards across many blind passageways which were at one time thought to lead out of this labyrinth, warning us that here is no thoroughfare, or that here we cannot go far before we will find ourselves face to face with another barrier; or that if we follow this path we will only travel in a circle, and arrive again at our starting point.

This question, constituting one as it were, on the borderland between the known and the unknown, has been a fertile field for charlatanism. Where the light of the known blends with the darkness and mists of the unknown, there the ignorant, feeling much at home, pitch their tents. Yet, notwithstanding this, very many scientific men have not hesitated to approach the problem. Their efforts range from the expression of the merest opinion on the subject to the construction of the most elaborate hypotheses based upon patient experimentation. But the hypothesis has yet to be announced that will account for all of the observed facts, or accounting for the facts will yield any results when put into practice.

As a consequence of all this, what is, to-day, the attitude of the scientific world toward this question? Some hold that it is in all probability insoluble; others hold that we may in time discover the factor which determines the sex, but that any control of sex will no doubt be impossible. Beard thus indirectly expresses his opinion of all schemes for the control of the sex in offspring. He says: "Any interference with or alternation of the determination of sex is absolutely beyond our power. To hope ever to modify its manifestations would be not less futile and vain than to imagine it possible for man to breathe the breath of life into inanimate matter. For the workings of nature in sex merge into her revelations of life itself."* Others believe that we already know what determines sex and that we have now only to overcome the difficulties which present themselves when we attempt its control, while still others hold that the whole question is one that is yet to be answered. They do not deny the possibility of finding an answer, but they believe that as yet nothing is so positively known that we can afford to dogmatize. With this last view of the question we are inclined to agree. One thing is certain: no hypothesis has yet been advanced that will satisfactorily explain all of the observed facts. There are always residual phenomena that refuse to serve as links in the chain, seemingly so strong and well connected in parts. We will not in this paper enter into the history of these investigations, or theories. In many theses it is well treated as an introductory to the author's own views on the subject, and to these we refer any who may be interested in the history of the problem. The com-

* I wish to acknowledge an indebtedness to my son, Dr. Ralph Wallace Reed, of New York City, for valuable suggestions as to the manner of presentation of this paper, and also for considerable assistance rendered in the preparation of the Manuscript.—T. E. R.

* Zoologische Jahrbucher Anatomie und Ontogenie, Vol. 16, 1902.

pass within which we wish to keep this paper prevents us from following this method. However, when we are able to gather any lessons from the results of others we will not hesitate to do so. Investigators here need not suffer for want of a literature. Burdock has compiled a list of some one thousand works on the subject.

The reader who has followed us thus far if he had not already preconceived opinions on this matter has now, perhaps, from what we ourselves have said, acquired somewhat of a prejudice against considering seriously the claims of any one who may think he has solved the riddle or even has something new to say upon it after so many have occupied themselves with it without marked success. However, we will ask him, if this is the case, to suppress for the time being these very natural prejudices and follow us to the end of this paper. When this is done we feel that if assent is not given to the conclusions drawn from the facts which will be adduced, it will at least be admitted that the hypothesis advanced accounts for the facts as well as many others which have been promulgated within the last fifty years; and furthermore, as far as we are aware, the main details of the theory have never been anticipated.

Hipocrates was one of the first to express an opinion on the determination of sex. He was a physician and since his time it has been a problem that has appealed especially to this profession. It will here be considered largely from the standpoint of the physician.

Let us briefly consider some of the different theories which have been advanced: what may be said in their favor and what may be urged against them. Thus by a process of elimination we may narrow our inquiry down to comparatively restricted limits. While it would be interesting to do so we will not attempt here to consider the speculations on sex published in the middle ages, or during the periods of Greek and Roman speculative philosophy. Their ideas on this, like those they held on many other natural phenomena, were based on no scientific foundations and at the best were usually guesses—excellent guesses sometimes, but still after all only guesses.

First we have those who hold that the sex is a definite property of the ovum, that it is male or female from the very beginning of its existence, and that the whole function of the spermatozoa is one of fertilzation or supplying the proper stimulus to the ova. The part here played by the spermatozoön is thus a minor one even in the higher animals, and it is pointed out that in the lower forms of life fertilization often takes place without any fusion with the spermatozoön, thus proving that the conference of sex is not one of its functions at least. We would thus never be able to control the sex unless we could exercise a choice in the selection of a particular male or female ovum. Even supposing that we could in some manner devise a test for sex in the ova the fertilization of selected ova would present difficulties which, in the higher forms of life at least, would be impossible to overcome. Nevertheless the fact that this hypothesis offers us no hope for the control of sex is no ground for its rejection. There is something to be said in its favor. It is supported by good authority, by its accounting for parthenogenesis, and by the fact that sex is one of the earliest characteristics to be distinguished in the embryo.

To digress for the moment, let us sketch the different methods of reproduction. We are compelled in the beginning to recognize the fact that with many forms of animal and plant life there is no differentiation of sex whatever. In the protozoa we have reproduction by the simple act of fission or division. This is the manner of multiplication of all simple animal cells; it is, in short, either a direct cell division or karyokinesis. Then we have a budding or gemmation which is the common method of reproduction with the polps and in many infursorians. Next a very free bud formation, known as endogenous or spore formation as with the *arcella.* When we reach the metazoa we have a borderland process between sexual and asexual reproduction. Here the distinction between body cells and reproduction cells is more marked. Now the distinctive characteristic of sexual reproduction is the existence of two forms of cells; one form being fertilized by the other. The facts of sex evolution would thus seem to favor the above hypothesis. It should be remembered, however, that these dimorphic cells may be produced from male and female individuals as is the case with the higher forms, or they may as with some of the lower forms of life be produced within the same organ of the same individual *but at different times.* This point we will later consider in greater detail.

The ideas of Beard, who is probably the ablest of the upholders of the thesis that sex is a property of the female germ alone, may be thus summed up. He holds that the male element has not the slightest influence in determining the sex, it only exercising the function of fertilization or in other words orignating the amphimixis. He believes that sex is a function of the egg itself, and that with a given ovum there is nothing that can alter the sex that is predestined to arise from it. Sex therefore is not determined at the moment of fertilization but a long time prior to that. The doctrine that the sex of the embryo may be influenced through the mother after development has commenced, although never possessing much scientific standing, is entirely discredited by these investigations.* Before leaving this phase of the question it might be well to mention another point at issue. Some investigators have held that fertilization itself has something to do with sex, as it was at one time thought that fertilized eggs in the bee could only give rise to females. Beard denies this, however, and holds that both male and female can be produced parthenogenetically.

We believe with Beard that it can be shown that sex does not arise subsequently to impregnation, and this is practically the concensus of scientific opinion to-day, but we hold that the view which makes a definite sex distinctively a function of a particular ovum existing as such for an indefinite period prior to impregnation, is one that at the best rests upon a hypothetical basis. Even if the ovum be one which undergoes development without fertilization it cannot be shown that it, from its origin, must necessarily have been male or female, and that prior to the beginning of its development it could not have been as it were in states of equilibrium or fluctuation—its sex subject to determination by some slight subsequent influence. Or in instances where development depends on fertilization, since the sex cannot be known until after some degree of development has proceeded, how can the influence of the spermatozoa be ruled out?

* See Zoologische Jahrbucher, Anatomie und Ontogenie, Vol. 16, 1902.

But, it may be asked, is there any possibility that the sex of the ovum can be known prior to fertilization? We have been able to find no experimental evidence tending to show that it can. Minot* says in this connection, that there is no material basis of sexuality in the sense that there is any visible sex male or female substance (referring to the primitive cells) known to the biologist. He rather considers the male and female cells as essentially the same except that in the male cell there is an over development of the nucleus and in the female cell an over development of the protoplasm. The ova resembling old cells and the spermatozoa resembling young cells. He further remarks that we can ascertain the sex of a genoblast by observing its history and not by any direct test. It is probable, he says, that the male or female sexuality is an intracellular relation of parts, or some modification of the interplay of forces within the cells, and he believes that for the present this view must hold against the opposite one that there is a male matter and a female matter.

We will not consider in detail such theories as the influence of suggestion in determining sex, the time of day of conception, the time with reference to the menstrual month, the relative ardency of the parents, the ability of the more passionate parent to stamp the sex, the theory which holds that ova of one sex are produced one month and ova of the opposite sex the next, alternating, and thus maintaining an equilibrium between the sexes; or psychological theories which hold that a mother of strong character produces male offspring and vice versa. None of these ideas with the exception of the one which refers to the time of impregnation with respect to the menstrual flow have ever enjoyed much scientific standing. Some of them, as in the instance where sex is referred to the alternate monthly generation of male and female ova, may be readily disproved, hence they never obtain much vogue, while others, because the determining factor is conceived to be one which after all is relatively so indefinite, can never be disproved to their originator's satisfaction or proved to the satisfaction of any one else.

The possibility of modifying or developing characteristics by breeding has long been recognized by stockmen. Since the elaboration of the doctrine of evolution this method of improving a strain has been more carefully worked out and carried to extremes not before thought possible. This ability to secure desirable qualities in offspring by selection of parents possessing these qualities naturally led breeders to hope that they might in time be able to produce a desired sex in offspring by selecting the parents from strains in which the tendency to produce one sex or the other predominated. Copeman and Parsons attempted to systematize this method, but without apparent success.* Their failure might have been predicted. It was not recognized that sex differs very materially from other characteristics. Sex admits of but two variations, any other characteristic admits of variations which may be considered as almost infinite, and the very fact of breeding for a certain sex presupposes the admission as a factor in the problem, of the sex element opposite to the one desired in the offspring. This necessarily counts half, so we cannot hope for a preponderance of one or the other influence in the parents, or, the conditions being of course the same, in the grandparents, and so on back. Thus we see that as far as hereditary influences are concerned, by the very nature of things, there must be a tendency toward the maintenance of an equilibrium between the sexes.

* Human Embryology, 1902.

* For an account of their experiments see "Observations on the Sex in Mice," Copeman and Parsons, Proc. Royal Soc., Vol. 73, pp. 32-48.

PHASES OF CARDIAC DISEASE.

BY W. M. WORMLEY, M.D.

OPIUM is undoubtedly a tonic in cardiac debility. Take a weak heart after prolonged mental or physical strain or following exhausting disease, and opium is most excellent in its effects. It supports the heart in failing compensation, in irritable cases and in myocardial dilatation, in arteriosclerosis and chronic parenchymatous nephritis it is of value as pointed out by Musser. In hyper sensitive or hypochondrical patients the drug acts finely. Dyspnea is relieved by small doses of morphine, and rapid pulse is checked.

Special attention should be called to the influence of over-stimulation or over-exercise of the cardiac muscle; if any voluntary muscle or group of muscles be inordinately exercised, the muscles after attaining enormous size will show signs of wasting; this does not seem to be the case when all the muscles of the body are exercised, probably because no muscle can then be over-exercised. Voluntary muscles expend far more energy, which is primarily derived from the food and from the oxygen of the air, than they store up during the same time, so periods of rest must be alternated with periods of activity. The involuntary muscles, depending entirely upon involuntary nervous stimulus, also have their normal though brief periods of repose, which, in the natural condition of the heart, are adequate to allow time for necessary nutritive processes; if, however, the heart is beating rapidly permanently, or when in consequence of frequent attacks of palpitation, sufficient time is not given during diastole, the time of rest for the cardiac muscle, for nutritive processes, degenerative changes must follow. As the voluntary muscles demand their normal stimulus, which cannot be withheld, so the involuntary muscles demand neither too much nor too little stimulation. Instances of pathological degeneration of this kind are found in the parenchymatous degeneration attending prolonged fevers and in certain fatty changes. Under conditions of marked hypertrophy the disproportion between the work of nutrition and the resting periods must be even greater, and a nutritive breakdown is to be expected. The walls of the heart, when the seat of advanced changes, at times yield under normal blood-pressure, and when the degenerative process affecting the heart-muscle is less extensive, moderate hypertrophy may be developed in consequence of the occurrence of abnormal endocardial pressure. Here secondary dilatation occurs early, as the result of increased nutritional disturbances due to abnormal stimulation of the cardiac muscle. The history and progress of the following case illustrate in a striking manner the early development of dilatation of the heart under conditions of abnormal stimulation of its walls: An Irish laborer, 70 years old, had the diseases peculiar

to childhood, but never had rheumatism; he always worked hard, and was exposed to the weather a great deal; used considerable tobacco, and has been more or less of a drinker, but with no specific history. He has had a tremor of the hands for several years. One year ago he was in the hospital for two weeks with great shortness of breath and considerable cough; after discharge he developed œdema of the lower extremeties, which he has had several times since. He had a return of the dyspnœa, cough, palpitation, and œdema, with cyanosis; the heart's action at that time was weak and irregular, but no organic murmur could be detected, with all the physical signs of a dilated right heart and emphysema. Another attack followed, with great œdema of the legs; breathing being difficult and irregular. No murmur was present in the heart, but it was very weak and irregular in action, with cough at that time. About three weeks later forty ounces of a fibro-serous fluid were taken from the right pleural cavity. He was given iodides, and the effusion disappeared in three weeks' time.

At the examination two months later patient had during the previous night an attack of asthma, relieved by Hoffman's anodyne and a mustard plaster applied over the cardiac region; in the morning he was taken with a seizure of apoplexy excepting signs of paralysis; the face was deeply cyanosed, the veins of the head congested, and the pupils dilated. The pulse was full and tension very high, with stertorous breathing, involuntary emission of urine, and unconsciousness for about twenty minutes. There were general convulsions having no definite mode of beginning. The heart seemed very weak toward the last of this attack. At four in the afternoon there was another, though less severe, attack exactly similar to the first one. In the evening about twelve ounces of blood were removed from the median basilic vein of the right arm, after which there was marked improvement in the mental and physical condition of the patient.

Our inspection now shows a barrel-shaped chest, moving as a whole in inspiration. When coughing, the apices of the lungs protrude prominently in the supra-clavicular spaces, and diffuse pulsation is seen in the epigastrium. The apex-beat is diffuse, wavy, and seen most distinctly at a point a little outside of the nipple-line in the sixth interspace. Percussion showed hyper-resonance over the sternum and over the entire right lung, while the pulmonary note at the apex was decidedly lower-pitched. The right base shows dulness, probably due to thickened pleura; the area of cardiac dulness is extended toward the right. Ausculation posteriorly over the right lung shows prolonged feeble expiration, while the left lung posteriorly shows dulness with most rales, indicating hypostatic congestion; inferiorly the respiratory murmur is feeble and expiration prolonged. The lungs are emphysematous, and the heart's action is irregular, intermittent, and difficult to auscult. There seems to be a soft, mitral, systolic murmur; no murmur is heard over the base of the heart or in the carotids. The right heart is dilated markedly. The liver appears to be normal in size, as does also the spleen. His mind is not quite clear; the pulse is weak, irregular, and intermittent; the countenance, lips and tongue are pale; his hair is quite gray, and there is slight though distinct arcus senilis, and his arteries feel hard. The temperature is normal, at times even subnormal. There is slight dyspœna. He had on three different occasions Cheyne-Stokes breathing, lasting each time several hours; on inspection, the area of the heart's impulse is seen to be much widened, feeble, and distinctly undulatory, with slight epigastric pulsation. On palpation, no impulse is detectable, except over the upper portion of the epigastric region; when the impulse can be seen and not felt, it is good evidence of the existence of dilatation. In other cardiac conditions the impulse frequently cannot be seen, but may be distinctly discernible on palpation. The area of percussion dulness in this case corresponds to the area of visible impulse an important sign is dilation. Percussion dulness on the right side extends nearly an inch beyond the normal boundary line; above and on the left side the line of dulness falls just a little within the normal boundary, due to the overlapping of the emphysematous; auscultation shows a very feeble, short, irregular, distant first sound, with slightly increased valvular and greatly diminished muscular quality; the second sound is also feebly marked. A faint, soft, systolic murmur is heard near the apex, but not elsewhere, due to muscular incompetence. The diagnosis in these cases is not always easy, especially when, as in this instance, the signs and symptoms of cardiac dilatation are interwoven with those of fatty degeneration. Chronic alcoholism, the presence of atheromatous changes, the persistently weak and irregular action of the heart, the arcus senilis, and later the Cheyne-Stokes respiration and pseudo-apoplectic attacks, point to the probable existence of fatty degeneration. Evidences of dilatation of the heart early in the history of the case are not wanting, as shown by the occurrence of marked œdema, great dyspnœa, cardiac palpitation, and the physical signs of the causal condition—namely, emphysema. Lastly, the physical signs of a great dilated heart have been for a considerable period of time unmistakable. In fatty degeneration not attended with dilatation, the impulse, though weak, can be usually felt, even though it cannot be seen; not so in dilatation. No increase exists in the area of percussion dulness in fatty degeneration, while in dilatation dulness extends beyond the normal borderlines, to the right when the right heat is dilated, as in the case before us, to the left when the left side is dilated. In this patient's case there has been of late a systolic mitral murmur present, probably due to muscular incompetence, with no area of diffusion. In fatty degeneration due to anæmia, a murmur is often heard both at the apex and at the base; this murmur is also heard with great intensity in the carotids, and in the latter locality is often associated with the venous hum. When met with in connection with other evidences of fatty change, anæmic murmurs become a valuable diagnostic sign. The first sound in fatty degeneration is feeble and undefined. In dilatation, more particularly, where the walls are thin, this sound has a well marked valvular quality, rendering it sometimes short, sharp and clear. In this case the heart-muscle has undergone considerable disorganization, hence we have much the same sounds as in fatty degeneration. In the advanced stages of emphysema we sometimes find that the lung-tissue has entirely overlapped the heart, carrying the apex backward away from the chest wall;

remember that it is betrayed by a clear percussoin resonance. Dilation of the heart is frequently mistaken for pericarditis with more or less effusion. The points to be borne in mind with reference to the diagnosis of the latter disease are the higher location of the apex-beat, the vertically extended dulness which in this disease exceeds the area of impulse, the increased clearness of the heart-sounds near the base, at times the pericardial friction sounds, the absence of dropsy, and the history frequently of an attack of rheumatism. On comparing these physical signs with those of dilatation as before detailed, obvious differences will be at once observed; and in the absence of any organic vulvular disease we may correctly assume that the obstruction to the lesser circulation due to the emphysema was the cause of the dilatation. The explanation of the early occurrence of the dilatation in this case is to be found in the fact, as before intimated, that degeneration of the myocardium was probably in progress at the time of the occurrence of the increased endocardial blood-pressure. Increased stimulation, due to increased blood-pressure, of such heart-walls will not lead to compensatory hypertrophy, as in the normal condition of the walls, but will give rise to dilatation almost at once.

The treatment may be divided into medicinal, regimenal, and dietetic. As to diet, it should be restricted to nutritious substances that are easily digested and largely albuminous; perfect digestion obviates many otherwise distressing symptoms. The regimenal management of such patients is of paramount importance, for all forms of excitement should be avoided, as well as straining efforts of all kinds. The clothing should be carefully attended to, flannels being worn throughout the year. Warm baths are to be shunned, but sponging of the surface, followed by gentle friction or the use of the flesh brush, is to be highly recommended. Rest is excellent, more particularly where this condition is associated with chronic valvular disease; this frequently suffices to restore the equilibrium between the labor to be performed by weak hearts and a disturbed circulation, but once this disturbed balance has been restored, gentle forms of exercise, alternated with liberal periods of rest, will go far toward preventing a recurrence of the accident, and tends to develop the entire muscular system, including the involuntary system of muscles, obviating over-stimulation of the cardiac muscle, and this fact explains the good effects obtained from Oertel's system, who recommends the severer forms of exercise, such as hill-climbing—with a view to stimulating the heart-muscle, thus aiding in the restoration of the hypertrophy. It is not simply the effect of violent exercise upon the cardiac muscles that is here beneficial, but especially the effect upon the general muscular system; Oertel's system is not to be generally recommended, for the same end can be attained by the pursuit of less violent kinds of exercise, the latter being far safer. When œdema is present, use digitalis, and, so long as it increases the amount of urine discharged, its administration will be found useful; should digitalis fail, try citrate of caffeine, which in a certain number of cases has been found to be excellent as a heart stimulant and diuretic.

Accidental heart murmurs are always interesting as they may occur when there is neither anæmia nor fever, as in certain forms of intoxication. Accentuation of the pulmonic second sound might occur in accidental heart murmurs. The accidental murmur might be diastolic in rhythm. The term "accidental" should be employed to designate all those cardiac murmurs which could not, after careful examination, be clearly demonstrated to belong to the organic class, it being clearly understood that as our knowledge extended and increased, the number of "functional" maladies gradually diminished. The term "accidental" commits us to no theory of causation and indicates no pathology which is correct, for no single theory yet reasonably accounts for all accidental heart murmurs. There may be a relative insufficiency of either the mitral or tricuspid valves, due to incomplete contraction of the heart, this latter being due to degeneration, fatigue, or to the effects of toxic agents, as in pyrexia, alcoholism, etc., and that under the circumstances the murmur might not vary in any of its essential characteristics, of quality, pitch, and intensity, or in point of maximum intensity and area of audibility, from regurgitation due to organic disease at the same orifice. The theory of Potain in regard to cardio-pulmonary murmurs seemed a possible explanation of some of the accidental murmurs; in all cases of organic disease the vibrations originating in fluid blood were due to the formation of fluid veins. The theory that the accidental murmurs originated in vibrations in the walls of the vessels or of the conus, and were not communicated to the moving column of fluid and so were not carried by it, might serve to explain the limited area of audibility of some of these murmurs; in many cases, especially those of systolic murmurs at the apex or of those heard over the body of the heart, a diagnosis could not always be made without watching treatment.

In a very large proportion of cases of mitral stenosis it is of rheumatic origin, and especially common in the more insidious and less recognizable forms of rheumatism; in later life, it may develop in connection with slowly developing fibrous and granular kidney; while there is undoubtedly some kind of association between mitral stenosis and tuberculosis, there is no evidence that the cardiac lesion is of tubercular origin, but rather that tuberculosis in other parts may be favored by a diminished power of resistance to the inroads of tubercle bacilli, due to defective supply of blood in the arterial system; that the absence of regurgitation in cases of pure stenosis is due to the sphincter-like action of the muscular bundles surrounding the root of the pulmonary artery; and that the characteristic alteration in the left auricle is not dilatation but hypertrophy, and that dilatation is probably introduced only with subsequent auricular breakdown. The prognosis of mitral stenosis is grave. Sansom says that in the rheumatic forms, life is rarely prolonged beyond 40 years of age —the average in his cases being 32.7 years.

Until fifty years ago dropsy was a disease, and the physician felt that he had done all that was required when he satisfied himself that a swollen limb or a distended abdomen was not due to fat or to wind or to a solid tumor, but to an effusion of water; but now the disease of one generation becomes the symptom of the next. Years ago physicians were satisfied with declaring that a patient's complaint had turned to "the dropsy," and explained the effusion as the result of relaxation of the fibres, of sinking of the animal spirits, or of defluxion of a cold and moist humor; so much easier is it to explain than to investigate, and

so recent is the conception of medicine as a natural science, as Pye Smith points out. At the present day we regard the recognition of dropsy, like that of paraplegia or amaurosis as only a step, which is not complete until we have assigned every symptom to its true cause and traced them all to a definite anatomical lesion or to some poisonous influence or internal cause of derangement. The difficulty of investigation is shown by the fact that when it was ascertained that the urine of dropsical patients would often become solid with heat, the fact was supposed to depend upon the effused serum being absorbed and excreted in the urine, so that albuminuria was regarded as the result of dropsy. Bright did not discover that dropsy and albuminuria often go together; that fact was well known before. His great merit was that he connected both these symptoms with anatomical changes in the kidneys; it was the combination of new facts in morbid anatomy with improved methods of clinical observation which made their discoveries bear fruit. The simplest example of dropsy is the local œdema which follows from obstruction to the return of blood by pressure on a limb, as when a ring is too small for the finger or a fractured leg is too tightly bandaged; here the arteries, with their thicker walls and higher blood-pressure, allow the flow of blood, but the more yielding veins do not permit its return. Also probably the pressure on the lymphatic vessels may help in producing the result; but that this is not the essential cause of œdema seems proved by the fact that it will follow thrombosis of a venous trunk without other complications, for it is true that ligature of the principal vein of a limb will not produce œdema in animals so long as the flow in the lymphatics is active—that is, so long as the effused serum can be rapidly taken up from the lymph-spaces and carried off by the lymphatic vessels; but in most cases of vein-obstruction, this lymphatic absorption does not keep pace with the exudation from the veins. The immediate effect of obstruction to a venous trunk is to raise the blood-pressure in all its tributary vessels, and under this pressure the liquid and soluble part of the blood transudes through the capillaries and venules into the lymph-spaces of the areolar tissue; water transudes holding the mineral salts and albumen in solution, together with minute quantities of yellow pigment and other soluble aqueous extractives. What does not exude is the corpuscular part of the blood and the constituent which is essential for coagulation of fibrinogen. That this transudation or effusion is not due to the physical laws of osmosis is clear, since colloids like albumen and globulin would remain in the blood, while only crystalloids like chloride of sodium and sugar would pass out with the water; the endosmotic currents from the fluid of lower to that of higher specific gravity—that is, from the lymph-spaces to the blood vessels—would always exceed the exosmotic from the blood to the lymph. It is somewhat difficult to apply even the physical laws of diffusion under pressure to the clinical facts with which we are familiar; for experiment shows that the skin of frogs and the veins of mammalia, while their epithelium is uninjured, offer far more resistance under pressure than do dead animal membranes. There is no question of the direct effect of increased intravenous pressure in producing exudation; but it seems probable that this effect is modified by the peculiar physical qualities of the living endothelial plates through which the outgoing stream must pass. The same result of locally increased pressure in œdema of a limb is apparent in one of the traditional varieties of dropsy, that which is called "portal" or "hepatic"; increased pressure in the portal blood-stream is due either to compression and occlusion of the trunk of the portal vein, or more frequently to increased pressure upon its capillary vessels in their course between and through the lobules of the liver. In the spleen this venous congestion leads to swelling and hardening of the organ; in the gastric, and less constantly in the intestinal, mucous membrane, to hemorrhage; while serous exudation takes place from the visceral peritoneum; the peritoneal veins do not open directly into the portal system, and we have no poof that in portal ascites the parietal peritoneum takes no part in the exudation; yet the relation of portal obstruction to ascites is far too close to be accidental. Cardiac dropsy, like almost all the other symptoms of valvular disease, can be directly traced to a mechanical origin, for the pathology, like the physiology of the heart and vessels, is almost purely that of a hydraulic machine, and can be more or less perfectly represented on a machine. Any constriction of a cardiac orifice, any defect in the valves, either from changes in their substance, which prevent their closing a normal orifice, or from dilatation of the orifice, which makes nomal valves incompetent, will inevitably produce congestion, fulness, over-pressure in the parts behind the seat of disease, and anæmia with low pressure in the parts in front, so that we may physiologically divide the symptoms of cardiac disease into those of venous congestion and those of arterial anæmia. The latter predominate in uncomplicated aortic cases which are marked by pallor, syncope, breathlessness, and liability to sudden death; the former in primary mitral cases, in those of dilatation of the right cardiac chambers from chronic obstruction of the pulmonary circulation, in the latter stages of aortic disease when the mitral valve has given way, and in the last period of chronic Bright's disease, when hypertrophy of the left ventricle is succeeded by dilatation, and a small, hard, renal pulse becomes irregular and compressible; the result of systemic venous congestion is twofold. On the mucous surfaces the distended venules give away, and hemorrhage relieves the pressure; thus, hæmatemesis may result by the same mechanism as in the cases of portal congestion from cirrhosis. Or where hemorrhage does not take place, an organ becomes swollen, dark-colored, firm, or even hard in texture, as the spleen, the kidneys, and the lungs from long-continued mitral obstruction. But the same congestion in the skin and subcutaneous tissue, and in the serous membranes, in all the lymph-spaces, large or small, which are lined by endothelium, leads not to hemorrhage, but to exudation of serum from the distended vessels, taking place first and most easily beneath the skin; next in one or the other pleura or in the peritoneum; to a much less extent in the pericardium; but little, if at all, in the tunica vaginalis, in the closed cavities of the brain and cord, or in the synovical sacs. The mechanical nature of this dropsy is shown by its so strictly following the law of gravity; cardiac dropsy begins in the ankles, where any congestion of the veins is most favored by the weight of the blood. When the patient takes to his bed it affects the back, loins, and upper ex-

tremeties; and one arm is more swollen than the other according to the side on which he habitually lies. If the face show any œdema it is before it is raised from the pillow in the morning. The dropsy of Bright's disease, the third of the traditional clinical varieties of anasarca, is now known to be of two separate pathological kinds. The one which occurs toward the end of the most chronic cases with insidious origin, atrophy of the renal cortex, and cardiovascular changes, is mechanical in pathology and cardiac in origin; coming on only when the pulse and other symptoms give evidence of cardiac failure, it affects the feet first, and the face but little; and it may be accompanied with extreme congestion or even hemorrhage in the lungs or stomach. There remains the much more striking, extensive, and characteristic anasarca which marks both early and later stages of the more acute form of Bright's disease, with its definite onset, and the well marked characters of the urine which mark tubal or parenchymatous nephritis. This dropsy is anasarca in the strict sense of the word, affecting all the lymph-spaces of the body at once, the integuments most rapidly and the serous membrances more gradually. It is not governed by the law of gravity, except in a subordinate degree. Its characteristic distribution depends rather upon the absence of fat and the presence of distensible skin and loose connective tissues. This applies especially to the œdematous conjunctiva, which produces the traditional "bright eye" and "the tear that does not fall," to the baggy lower eyelid, and to the often prodigious œdema of the scrotum and prepuce. The almost universal anasarca by mechanical distention of the skin and pressure on the vessels, aided by the anæmia which is part of the disease, produces that extreme and striking pallor which it is said Bright himself recognized as a symptom of tubal nephritis in the remark that "a large white man means a large white kidney." Pathologists, from Bright, Traube, Bartels and Cohnheim, Johnson and Dickinson, among many others, have put forth various theories to explain it; but none have gained general acceptance. When we have separated the later mechanical dropsy of chronic Bright's disease, which has just been referred to, the true renal anasarca cannot be ascribed to a hydraulic origin. On this hypothesis, there is no valid physiological cause for its occurrence; its distribution would be different; and as a matter of fact it does not occur in other forms of disease when the hydraulic conditions are favorable. Again, this distinctively renal anasarca is certainly not the mere result of scanty secretion of urine, since it often continues when the kidneys have reattained or surpassed their normal excretion of water; and, on the other hand, it does not accompany great diminution, or even suppression, of urine, when this is due to other causes than nephritis. No anatomical evidence has yet been offered to support Cohnheim's hypothesis of a change in the walls of the capillary vessels which favors the escape of serum. Nor does any change in the constitution of the blood, the diminution of albumen and other colloids, the diminution of red corpuscles, or the excess of urea, explain renal dropsy; since we find nothing like it when anæmia or albuminaria or uræmia is present from other causes, not even when they are all present together. Probably the dropsy of Bright's disease, in its more acute and characteristic form, is not a passive exudation at all, but inflammatory. In the first place, this agrees with its universal distribution and comparative independence of gravity as above described. Next, it explains its absence in the most chronic and least inflammatory form of Bright's disease. Again, it brings under a common explanation the two conditions, clinically so closely and inextricably united, of dropsy and serous inflammation. Every practical pathologist knows how difficult it is to draw the line between hydrothorax or ascites in cases of Bright's disease, and pleurisy or peritonitis with effusion. The difficulty is far greater than in cases of cardiac dropsy. If the serous exudation be itself inflammatory we need not seek to draw artificial distinctions. Lymph, serum, or occasionally even pus, are alike the exudation of renal peritonitis, pericarditis, or pleurisy. The same view brings into line with the dropsy and serous inflammation of renal disease the important and characteristic lesion known as acute œdema of the lungs. This, in typical cases, is unaccompanied by a congestion, and is perfectly distinct from the bronchitis or pneumonia which may occur as renal complications. It presents just that combination of dropsy with inflammation seen in the exudation of the serous membranes and the anasarca of the whole body. On this hypothesis we should be able to group together these three characteristic symptoms and say that in acute and subacute tubal nephritis there is, as part of the disease, more or less extensive and severe inflammation of the principal lymphatic spaces of the body, viz., of the loose connective tissue under the skin, of the air-vesicles and interlobular connective tissue of the lungs, and of the cavities formed out of the great pleuro-peritoneal lymph-sac. In each case the exudation is always watery, frequently fibrinous, rarely purulent, and never hemorrhagic. Beside hepatic, cardiac and renal dropsy, there are certain minor varieties of anasarca, the pathology of which demands notice. Such are the œdema so frequent in cases of phthisis, that which often attends anæmia, the anasarca of scurvy, and the moderate œdema which is often seen during convalescence from fevers or other acute diseases, and disappears with the complete establishment of convalescence. In chronic phthisis, there is evidence of dilatation of the right side of the heart and general venous congestion, as in other examples of chronic obstruction in pulmonary capillaries. When the dropsy follows acute diseases we find that the pulse is weak and compressible, while the patient is liable to giddiness, or even syncope—at first on merely raising the head and afterwards on standing upright. In these cases there can be no doubt that œdema of the ankles depends upon a weak left ventricle causing low arterial blood pressure, with stagnation in the veins, particularly where the circulation has gravity against it. The cardiac muscles suffer in the same way as do the muscles of the limbs, and the circulaation is weak for the same reason as the patient's grasp is feeble and his gait uncertain.

In cardiac dropsy try some such preparation as the following (Pye-Smith):

℞ Ext. strophanth., fl.
Ext. convallariæ fl., aa ℥ii.
Tr. digitalis, ℥iiss.
Glycerinæ, q. s. ad ℥ii.—M.

Sig.—One-half teaspoonful every three hours, in water.

Remove causal conditions in individual cases; if the patient is not the victim of general atheroma and fatty

degeneration, assist him by directing active treatment towards the emphysematous condition of his lungs. In emphysema, first arrest pathological degeneration of the walls of the air-cells; and, second, restore the mucous membrane of the bronchial tubes, which membrane is usually in a state of passive hyperæmia, to a healthy condition. To fulfil the first object give iron and arsenic in small doses long continued, and for the abnormal condition of the bronchial mucous membrane give iodide of potassium or the syrup of hydriodic acid. Iron, arsenic, and strychnine should also be employed in this case for their effects upon the heart-muscle. The following combination can be used:

℞ Ac. arseniosi, gr. i.
Ferri sulph. exsic, gr. xxi.
Strychnini sulph., gr. ½.
Ext. gent., gr. xxiv.
M. ft. pil. no. xxi. div.
Sig.—One three times a day after meals.

After aspirating the chest give the iodides, with excellent results. These were given in the recipe following:

℞ Syr. ferri iodidi, ℥iiss.
Pot. iodidi, ℥i.
Syr. limonis, ℥iii.
Syr. sarsap. co., q. s. ad ℥iv.—M.
Sig.—A dessertspoonful three times daily in water.

Should the dose indicated fail to cause absorption after having exhibited for two or three weeks, increase it from a dessertspoonful to a tablespoonful. Bleeding can be resorted to with a view to relieving pseudo-apoplectic attacks, with gratifying results. Whenever in cases of dilatation, with or without valvular disease, there occurs marked engorgment of the right heart, as shown by cyanosis, dyspnœa, etc., venesection will be found to give prompt relief. The amount of blood necessary to be drawn is not, as a rule, large—from eight to twelve ounces, for example—though it should be allowed to flow freely. Blood-letting also relieves the pain which is often experienced in the region of the heart in these cases. The patient suffered occasionally from nocturnal attacks of asthma. One of these seizures, you will recollect, was relieved by a dose of Hoffmann's anodyne and sinapisms. During a previous attack we were obliged to resort to the hypodermatic injection of morphine, using only one-sixth of a grain, with immediate relief from the attack.

Large doses of morphine, administered in this manner, are seldom required, besides, they would not be free from danger, while nitrite of amyl will sometimes be found useful.

Palliative surgery is rather reprehended by E. G. Janeway (*Med. Rec.*, March 17, '06). If a primary disease cannot be removed, and if death in time is inevitable, it is hardly right to recommend such operations as the production of a gastric fistula in cancer of the œsophagus or an artificial anus in an inoperable cancer of the rectum not markedly obstructive. Janeway would not urge the patient to dubious palliation; but would take counsel with the patient's family or his near friends, placing the matter candidly before him, explaining the nature of the disease, the prognosis with and that without operation. If they decide against surgical interference, Janeway would not consider they have acted very unwisely.

METHODS OF FACILITATING NORMAL LABOR.

BY W. T. MARRS, M.D., JEWETT, ILL.

EVERY man who practices obstetrics is interested in those methods and measures which assist in terminating normal labor and which are yet safe and conservative. The long hours of suffering on the part of the patient and the weary hours of waiting endured by the physician may often be materially shortened if we get out of the habit of maintaining a "masterly inactivity." The suggestions that I offer are based upon actual experience derived from hundreds of cases. Of measures to shorten labor I shall first speak of

Forceps.—I do not believe that the average obstetrician meets in a lifetime very many cases that are actually "forceps cases." However, every medical man should acquaint himself as thoroughly as possible with these instruments, but should exercise due deliberation before making up his mind to use them. A great many physicians, especially young men, think if natural labor is prolonged and they do not terminate it with forceps they will be criticized as lacking ability and skill. The sooner they abandon these ideas the better it will be for them as well as their patients. Hemorrhage and puerperal paroxysms are about the only conditions requiring speedy delivery. The value of the forceps as an agent to produce traction is somewhat overestimated and often abused. Forceps, when properly used, serve mainly three useful purposes: to compress the child's head; to rotate the head into a wider diameter; to act as a foreign body to promote contractions. The second and third purposes may usually be well accomplished by the application of one blade. No matter how skilful the hands that use them the forcep manipulation is not an artistic job nor one in which we can promise absolute safety to mother and child. There is very little chance for harm in the application of only one blade.

Ergot should be mentioned only to be condemned. It might be used in a goodly number of cases without injury, but a ruptured uterus will some day awaken the doctor to its danger.

Chloroform.—In the great majority of cases chloroform gives beneficent results. It allays nervousness and stops ineffectual pains, permitting uterine contractions to go on without interruption. I have never seen any untoward results from the use of chloroform in obstetrics. It should be pushed only to the extent of blunting the nerves and taking the raw edge off the woman's suffering. The dilatation following its use is often remarkable. There is *nothing* absolutely sure about a woman, so we find once in a while a case where chloroform does no good but rather seems to retard labor.

Stimulants.—Quinine is quite effective in strengthening pains if given in sufficient dosage to produce cinchonism. The headache and nervousness following its use are often quite unpleasant. Whiskey sometimes does good, but also leaves the woman with more or less depression and headache. Strychnine acts too slowly to be of value ordinarily. Copious draughts of pepper tea do good work and gives employment to the old ladies in attendance. It is non-toxic and cannot do harm, but being a diffusible stimulant, good results often follow its use. No doubt, any other kind of hot drinks would be equally effective.

Sedatives.—They often do good by quieting the nerves and relieving false pains. Morphine is the drug usually chosen. It relieves suffering to some extent and in a goodly number of cases accelerates labor, while in almost an equal number of cases labor seems to be retarded by its use. Chloral internally and per rectum usually aids in relaxing a rigid os. Antispasmodics are useful where the patient is nervous and the os unyielding. Among these we may mention viburnum, the bromides, hyoscine, etc.

Hydrotherapy.—A hot foot-bath or a sitz bath will often work wonders. Hot moist pads applied to the vulva and perineum have quite a relaxing effect.

Emetics.—Where other methods fail to relax a rigid os and perineum I have in perhaps a hundred cases given a capsule or two of powdered ipecac with most excellent results. This suggestion I have never seen in a medical journal only over my own name.

Other Measures.—Some of our authors say to keep the woman flat in bed after the first stage of labor has set in. These authors, I fear, have not an extended clinical data on which to base such assertions. The woman may, there being no contraindications, walk about or sit in a chair until the os is practically dilated. Do not let her sit up in the bed, as her cramped position is sure to prolong labor. The woman when standing or on her knees is aided by the gravity and general mechanical effect which the child exerts. When labor is nearly complete, but the vaginal delivery difficult, the woman may kneel over a chair placed in the bed. The physician can in this position guard the perineum and regulate the on-coming head very satisfactorily. Of course the conditions are not esthetic, but the latter cannot always be regarded in the practice of obstetrics. It is presumed that every man who enters the accouchement chamber is a gentleman —for the time being, at any rate. This being the case, very few patients will fail to heed the doctor's requests.

A bandage applied snugly around the abdomen is often of signal service. A medical friend in the Philippines states that the native woman while in labor is sat upon by some big, husky man and otherwise subjected to the cruellest treatment with a view to facilitating delivery.

It should not be forgotten that a tedious case is often expedited by a rectal injection. I have known a number of cases of labor to be prolonged on account of impacted feces.

Gastro-Enterostomy.—It has been with no little surprise that we have noted the stress laid upon this operation, in general considerations of the surgical treatment of gastric affections. It has been lauded by so many surgeons and practiced successfully in so many instances, that it enjoys a vogue quite out of proportion to its theoretic indications. In 1904 Campbell P. Howard reported to the American Gastro-enterological Association the results of a statistic study of the frequency of gastric ulcer. In 161,599 admissions to various American (including Canadian) hospitals, gastric ulcer was observed clinically in only 930 cases or 0.57 per cent. The relative frequency varied from 1.74 per cent. in the Massachusetts General Hospital (which also had the largest number of cases, 351), to 0.12 per cent. for St. Joseph's at Baltimore and the Arapahoe County Hospital at Denver (the smallest number being 4 cases for the former). Post mortem records of 10.841 cases covering the same territory but not altogether the same institutions showed a frequency of 1.32 per cent., the highest incidence being 2.9 per cent. for the Massachusetts General, the lowest 0.69 per cent. for the Royal Victoria at Montreal.

These comparative statistics by no means indicate that only about 40 per cent. of ulcers are correctly diagnosed. For instance, the Massachusetts General supplied 351 ulcer cases, but only 29 out of an even 1,000 necropsies. Obviously, gastric ulcer would make up a greater proportion of fatal than of non-fatal medical cases. Then, too, many of the cases presenting ulcers post mortem, include ulcers due to chronic vascular disease or minute lesions, not diagnosticable during life and scarcely requiring treatment for the ulcer itself, even if it could be diagnosed.

Some of the recent surgical reports imply an incidence of gastric ulcer far in excess of the frequency thus established. Indeed, so conspicuous is the discrepancy, that we must suspect that the surgical diagnoses have not always been correct, since gastric ulcer is not yet generally recognized as a distinctly surgical disease.

Comparative statistics of mortality of gastric ulcer under medical and surgical treatment are so variously given by different writers and the conclusions drawn as to the relative advantages of the two forms of treatment are so diverse that it is, at present, impossible to form an unbiased opinion. From a moderately large personal experience, we are loath to admit the hopelessness of medical treatment or the statistic superiority of operative measures.

At any rate, gastro-enterostomy does not fulfil the theoretic indications present in ordinary gastric ulcer. (1) This operation does not remove the lesion itself. (2) It does not influence the underlying tendency to vascular spasm—or relaxation—which is the probable underlying cause of acute peptic ulcer, nor the degenerative vascular lesions of ulcer in the later years of life, nor the specific infectious processes and circulatory obstruction which underlie other kinds of ulcer. (3) It does facilitate the rapid passage of chyme through the stomach, but, in many cases, the pylorus itself is abnormally relaxed, and in other cases there is no abnormal retention. (4) The drainage of gastro-enterostomy is not necessarily free and, certainly, does not afford the physiologic rest to the stomach that can be obtained for considerable periods, by rectal alimentation. (5) In so far as ulcer is due to the digestive action of acid gastric juice, gastro-enterostomy is only partially efficient in protecting the stomach while it transfers the danger to the intestine—a real danger, in the light of the considerable number of consequent duodenal and jejunal ulcers, relatively to the comparatively small opportunities for observation.

The immediate objections to the operation are its direct surgical mortality and the possibility of establishing a vicious cycle of bile. With improved technic, the former danger is not very great, the Mayos, for example, having had only 6 per cent. of deaths in a series of 271 gastro-nesteostomies (wrongly called gastro-jejunostomies). A considerable number of devices have been used to prevent the vicious cycle. The very number renders one suspicious of their efficacy, even with favorable reports from surgeons, for the one particular modification favored.

In gastric cancer, gastro-enterostomy, curiously enough, yielded better average results in prolonging

life, than attempts at radical removal. Still, physicians and patients are reluctant to advocate or submit to an operation that is avowedly palliative, and, by careful attention to diet, including rectal alimentation, and by lavage, etc., surprisingly few cases fail to be kept free from the direct results of gastric stagnation.

As in the case of most ulcers, cancers not situated at the pylorus or very near it are, obviously, not directly benefited by gastro-enterostomy. Some surgeons have practiced gastro-enterostomy for various conditions of the stomach and bowel, without any apparent indication, but simply on "general principles," a term that, as ordinarily used in medicine, means without any underlying principle at all. We have even known of its being done in cases of very free drainage through the pylorus, without any definite, localized lesion of the gastric wall. In one case, the surgeon strenuously advised gastro-enterostomy in a case of general failure of vitality, due to premature senility—or vice versa—and in which the principal trouble was a mucous colitis. His argument was that, since medical treatment had failed to give relief, surgery should be tried.

We would point out to our readers that gastro-enterostomy can be of direct value only when there is some form of pyloric obstruction. This obstruction should be demonstrated, not guessed at, and, certainly, when obstruction is proved to be absent, only peculiar circumstances can justify or even excuse this operation. Even when obstruction is evident, the question should be thoroughly discussed whether it cannot be relieved by some other form of treatment—as it almost always can be unless the obstruction is entirely organic. Furthermore, a successful gastro-enterostomy entails a subsequent abnormal condition whose result may be much more serious than is at present apparent. While the full reasons for the retention of ingesta in the stomach and their rhythmic discharge into the bowel are not yet known, they are partly explained by physiology and we should be most reluctant to overthrow any natural state without ample demonstration of its unimportance or of the superior advantages of some condition artificially established.

Syphilis and its treatment was recently discussed by Jonathan Hutchinson before the Hunterian Society in London. The virulence and mortality from this disease in the United Kingdom seems to be decreasing; in 1875 the deaths were 2,140, whereas in 1904 there were 1,834. Had the mortality kept pace with the increase of population the number of deaths would have reached 3,000. No doubt this improvement is due to more effective modes of treatment, and to the fact that the disease is now generally milder in type. Mercury should be given in the primary and secondary stages of syphilis —the earlier the better, provided the diagnosis is certain. The drug should not be given otherwise, and if necessary one had best wait until the appearance of the roseola. It is, however, possible to prevent entirely and anticipate the secondary symptoms, if one is sure of the nature of the mitral lesion; tertiary symptoms are thus oftentimes prevented. Many chancres are sufficiently characteristic to justify immediate treatment. As much mercury should be given as can be borne, avoiding ptyalism. (We have, however, seen tertiary patients with gummata who had been "soaked" with the iodides and mercury, improve greatly upon cessation of these drugs and the substitution of simple tonics. The anti-syphilitic specifics had of course to be resumed later). Hutchinson considers there should be continuous treatment for a year. In the first and second stages the object is to kill the parasite. In the tertiary stage the destruction of the parasite is no longer the object of treatment. Tertiary changes are often single, restricted to one organ or tissue, very rarely general; there is no reason to regard them as of blood origin, toxic or otherwise. The parasite is then no longer existant. Tertiary symptoms are commonest where early treatment has been delayed or inadequate. The inunction and calomel vapor bath methods are both efficacious, but inconvenient and expensive and liable to be prematurely discontinued. Intramuscular injections are very dangerous, excepting in the hands of the expert, and should be reserved for special conditions, especially in the army. Tertiary symptoms and either inflammatory, degenerative or gummatous. The iodide of potash internally, and iodoform, iodol and chinosol externally are specifics and often produce permanent cure of gummatous growths. Degenerative changes such as tabes are rarely arrested by specifics. All conditions attended by inflammatory changes, such as general paresis of the insane, should have small doses of mercury continued permanently. Hutchinson believes that if general paresis were attacked at a very early stage a cure might be obtained. Herein he agrees with Dana. Tuberculosis sometimes complicates tertiary syphilis. Specific lupus is a combination of the two and some "relapsed chancres" are tuberculous. A man may safely marry if the treatment has been continued for two years from the date of the chancre; a much longer period, however, is essential for a woman. A man with a tertiary symptoms may have quite healthy children. Syphilis cannot be transmitted to the third generation, declares Hutchinson. The younger children in syphilitic marriages are free from the syphilitic taint and are well-grown and robust; this fact opposes the theory that the disease, when incapable of transmitting its characteristic symptoms, might still cause arrest of development. Syphilis is not an appreciable cause of race degeneracy. Syphilitic iritis and keratitis are more common in female than in male infants; Hutchinson cannot tell why this is so.

Dr. Guide Bacelli, a Roman physician, received graceful tributes on the occasion of his fifty years' professorship in the Policlinicum. To celebrate his jubilee, and at the same time that of the institution with which he was connected, the Italian King and Queen, together with many notabilities, assembled at the capitol and honored him in a manner resembling the mediæval ceremony of crowning a poet. He was addressed as the chief ornament of the Italian medical world; the man who established the claims of experimental medicine; a man whose great scientific labors did not prevent his playing an important role in the politics of his country, and among the presents he received was an album containing the autographs of six thousand physicians. Bacilli has done great work in malarial and other fevers. His confreres claim that, in treating Victor Emanuel II., he was the first to use pure oxygen. Of his hundred or more publications, the "Patologia del cuore et dell aorta" is the most important; this he wrote after his mother had died of heart disease. He was, states the *Evening Post,* four times appointed minister of public education; and in this position he accomplished much that benefited the cause of art.

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People wish to be settled; only as far as they are unsettled, is there any hope for them.—*Emerson.*

THE PLAGUE IN JAPAN.

IN one of our popular magazines there is running a series of articles on the menace of the Japanese in the commercial world. The writer makes out a very startling case. He shows that the Japanese workman lives on practically nothing—at least, so it seems to Occidental eyes—while his energy is untiring and unceasing. This little brown man is adaptive, silent and full of ambition. Thus the Japanese, untrammeled by past traditions, are taking our best ideas and plans and utilizing them against ourselves. In addition the government permits no monopolies, but instead calmly assimilates the more profitable American monopolies for themselves. In this way this writer shows that the Japanese are a real serious menace in the commercial world.

Another side of the picture is shown, however, by the famous Professor Kitasato in an article in a recent number of the *New York Medical Journal.* He shows what a drag disease is to Japan, especially the plague. Even now, when we read that there were a million visitors in Tokyo in June, the plague in all its horror is spreading through the country.

Professor Kitasato shows what a splendid fight Japan is making and in turn teaches us many valuable lessons on the subject. In the past ten years the plague has been epidemic in various parts of Japan; in 1899 and 1900 in Kobe and Osaka; in 1901 in Wakayama; in 1902 and 1903 in Yokohama and Tokyo; in 1904 in Kobe, and in 1905 it was scattered through the country at many points. Still there seems to be three principal epidemics, in 1899-1900, 1902-1903 and in 1905, which is still prevailing.

Every time it did not seem to be patients but inanimate objects which introduced the plague. Thus vessels coming from infected ports, such as Hongkong and Bombay, brought the germs in their freight. Cotton was landed and from this the plague was started. The disease always started at a port communicating with foreign countries and spread inward. The disease always infected first the rat tribe and by the time human victims were discovered the disease was well established. Thus, in 1905 infected rats were found in February, and in May human victims were found.

The Japanese have found that a winter epidemic is generally chronic, raging for a long time over a large area, while a summer epidemic is usually acute, severe but of short duration and limited to a small area. To prevent this contagion spreading, the Japanese have tried everything and invented much more. Thus, for killing rats aboard a vessel, rat-destroying boats are used to success, while on land rat-killing devices, traps and poisons, are provided for every dwelling and warehouse. Where dwellings can be tightly inclosed, formaldehyde is used; or, if possible, the buildings are burned down and rebuilt, sewerage is enforced and filth burned. Around infected areas zinc walls are constructed and metal nets placed in the sewers; then a search is made for rats, these walls and nets preventing their escape. In Tokyo alone there are zinc walls to the length of four miles. Their use has always been followed by a great destruction of rats. In addition the government buys all rats that can be found, spending in Tokyo alone one hundred and sixty thousand dollars for this purpose since 1900. As a result five million rats have been killed and yet their number is not appreciably decreased, for they increase at an enormous rate. The Japs have found that the destruction only lessens the struggle for existence and hence the rate for multiplication redoubles.

Searching for patients is also an important part of the work of prevention, for it has been found that only about one-tenth of the cases are reported. Hence the physicians are given police power. Inspecting physicians convey suspected cases to an isolating hospital and those exposed to danger are inoculated with pest vaccine. The pest serum and vaccine have been used now in thousands of cases, but their value is not yet definitely settled, but it is thought to be favorable; thus in Taiman, Formosa, ten thousand people were inoculated and only seven were attacked by the plague, while of forty thousand uninoculated over five hundred were infected with the plague.

In treating the plague patient, the Japanese doctors have two methods; one consists in the extirpation of bubos and the other the inoculation of serum. The earlier the treatment, the more efficient it is. In a plague patient a large amount of serum is required. These two methods are the only ones which the Japanese have found of any value.

The expense to which Japan has been put by this disease has been terrific. One city alone spent more than three hundred thousand dollars in the first epidemic, while in the second Tokyo spent fifteen thousand dollars for each victim. These are the direct burdens, but the indirect effects are not estimable. It affects all domestic and foreign traffic and runs into the millions. Kitasato considers the plague the most fearful enemy of mankind.

The practical problem arises at once as to the total destruction of the plague. This cannot be done in Japan, or in San Francisco, but must be undertaken in the countries when the disease is pandemic. In India and Southern China the plague is deeply rooted, producing each year over two hundred thousand cases. Plague is a menace to mankind and should be so treated. All civilized nations should combine and fight this common enemy. Expeditions should be sent to these regions to change conditions completely. The expense would be money well invested, for it would mean the saving of millions of lives. As Kitasato points out, a small part of what civilized nations are spending for their armies and navies would be sufficient for this beneficent purpose.

THE COUNTRY DOCTOR.

IT occurs to us that it is high time to cease thinking about the country doctor as a separate species, although the best excuse for so doing is that he commonly regards himself with becoming but scarcely justified humility. Excepting that one cannot achieve fame as a teacher where pupils are few and informally taught and that one cannot secure experience in any special line unless he has a large mass of clinical material which is being picked over for special cases, there is no reason why the physician in a small town—or, for that matter, in the open country—should not be just as well trained, and have just as much experience and skill as in a large city. Nor, in ordinary circumstances, is there any reason why the country doctor should be deprived of the benefits of attrition with other physicians.

A correspondent writes us that he has recently attended a good-sized meeting of a society, nearly all of whose members are country doctors. Speaking in averages, he says the scientific program was just as good as that of any community or gathering unless special pains were taken to secure communications of exceptional value from men recognized as far above average attainments. The members and their women folk were as well dressed, as well versed in the amenities of life, college fraternity pins were as much in evidence, and the general marks of education, refinement, professional ability and success, were as abundant as in any gathering limited to residents of cities. The country doctor is an interesting type for an Old Homestead play or a dialect novel, but, in real life, we do not want, and in this particular, we rarely find a type that stands out from the general profession as a mark for our tearful sympathy or half-concealed contempt.

On the other hand, the attempt to make a hero out of the country doctor, to the disparagement of the city physician, is equally without true foundation. Without realizing it, many people have absorbed from Ian MacLaren and other writers, the notion that there is a terrible snowstorm or bridge-destroying freshet every night in the year in the country, and that the doctor, after sixteen hours of ordinary professional work, has an obstetric case or an emergent operation ten miles from home, for which he must risk his life to the elements, for the sake of charity or a very small fee.

As a matter of plain fact, both the city and the country physician, run some small risk of freezing, drowning, being upset from vehicles, encounter periods of excessive physical and mental strain, and are occasionally subjected to an infection directly from patients. In spite of these risks, they enjoy, on the average, a high longevity. Undoubtedly, the matter of transportation to and from patients, is a more serious problem for the country practitioner than for his colleague in the city. But, like any other incidental, it can be and is met, and quite simply in so far as the rigors of climate are concerned, by extra wraps, waterproofs, heaters, etc.

There seems to be a prevailing impression that the financial success of the country doctor is less than that of his confrere in the city. It must be admitted that specialization or the building up of the kind of reputation which commands large fees for small output of time and effort is almost absolutely confined to large centres of population. Comparing the general practitioner in the city and the country, it must also be admitted that a successful, routine man in the former, on account of the greater possible clientele and the smaller distances covered in seeing patients, may earn more fees in a day and that the fees are slightly higher, though the difference, in practice, is not so great as is commonly supposed. One who is literally a country doctor—that is to say, who lives simply at a cross roads—has estimated his possible earnings at about $3,500 a year, this limit being set at the point of maximum endurance in busy seasons.

While it is easy to sneer at an income of $3,500, the best statistics available place the average gross medical income at not over $1,000. We are inclined to believe that the mass of small incomes that reduce the average are found in the city. At any rate, the country doctor has, as a rule, fully the average clientele of

about 600, his clientele is rather more exposed to sickness and accident than is the case in healthy cities, and all but a small part of it is honest and financially responsible, whereas, in any large city, the paupers and dead-beats amount to probably 25 per cent. of the total population.

It must also be borne in mind that all ordinary living expenses are much less in the country than in the city. For example, an ample allowance of land for a house, barn and garden, in the country, or small village, costs about $200, whereas any fairly desirable building lot in a medium-sized city would cost about $1,500 to $3,000. Buildings cost about 25 per cent. more in the city. For rented houses, fairly comparable rates would be $100 for the country, $200 for a good-sized village, $500 for a medium-sized city and $1,000 for New York, not, of course, for identical houses and grounds, but for what would be considered appropriate for professional men of moderate means. We have heard it stated that the maintenance of a horse and buggy—not counting repairs and replacement—costs about 10 cents a day in the country or in a small village. In a medium-sized city, the same charge would be about four times as much. Moreover, while the country doctor could take care of his own horse and buggy, this would scarcely be feasible in the city. All important items of household expense are also considerably higher in the city.

Both as a matter of theory and of actual experience, it is found that the physician may usually support himself from the start, in the country, whereas, in the city, he may reasonably count on three years before this point will be reached; that a comfortable, though modest, living and corresponding social position, is earlier and easier reached in the country or small town; and that, in middle life, the relative financial standing of the physician in the community is higher.

THE FOURTH OF JULY PROBLEM.

AMONG other bad features in civilization we have the Fourth of July celebration. No more idiotic or indeed criminal custom prevails anywhere. To allow children to handle and explode explosives is a wretched piece of business. Practically we must substitute something else for the present celebration and rigidly suppress all sources of infection such as powder stores and fireworks supply houses. Already much progress has been made, but the disease is only dormant and will break out again on the slightest encouragement. In Baltimore the authorities seem to have been especially active; the following account by Randolph in the *Journal of the Americal Medical Association* is most interesting as covering the ground in a practical manner:

"What has been done to bring about a change of affairs in Baltimore? Briefly, it may be said, first, that it is very difficult to accomplish anything in a movement of this kind without the aid of public sentiment. There is a fine of $2.00 for selling fireworks and of $5.00 for setting them off in the streets. I laid all of the statistics before some of the *Sun* people, and especially the statistics of those injuries which occurred here in Baltimore and which I had collected from the various hospitals. These things were all embodied in several articles in this paper, which, as is generally known, is one of the strongest newspapers in the country. In this way public sentiment was molded. It was shown that our objections rested on the most solid sort of foundation. Letters to this paper appeared from various sources, but the spirit of reform predominated throughout, with the exception of some discordant notes. Along with these statistics the records of fires on the Fourth were also published. It was shown that the average number of alarms for the year was about four a day, while on the Fourth the alarms ran up to twenty-five and thirty. This means that the fire department was strung up to the highest tension throughout Independence Day. I laid the whole matter before Mr. George R. Willis, president of the Board of Police Commissioners, who called together the captains of all the districts in the city and gave them the most stringent orders to enforce the law. A certain number of men in citizens' clothes were specially detailed to watch out for those who either sold or set off fireworks. The police have generally looked on this law in rather a frivolous way, but with the knowledge that the public was in favor of suppressing the nuisance and with definite orders from their superiors they exhibited not a little zeal in arresting violators of the law. And it may be well to state here that the position which the police department intended to take in this matter was mentioned in the *Sun* several weeks before the Fourth, not only to emphasize the fact that our way of celebrating the Fourth of July is contrary to law and order, but also to give sufficient warning to the smaller shopkeepers not to lay in supplies of fireworks which they were forbidden by law to sell. The Fourth of July, 1904, showed thirty-five accidents, two of these being eye injuries. At the Presbyterian Eye and Ear Hospital there was not an injury of this character, for the first time in twenty years. The other thirty-three injuries were burns in various parts of the body, and of this latter class there had been, the year before, between one and two hundred. Last year the matter was revived in the same way, and the result was, that in Baltimore, a city of 560,000 inhabitants, there were only six injuries, three of these being eye injuries. What then, can a medical man do to cleanse his community of this nuisance? 1. Arouse public sentiment in your

favor, and this you can surely do by telling your fellow citizens what the records of their own hospitals and of their own fire department show, to say nothing of records from numberless private sources. This should be done through the columns of an influential paper which is thoroughly in sympathy with the movement. You can do this just as effectively as though you were urging your fellow citizens to take steps to rid the city of a scourge of yellow fever or of cholera. 2. Lay your statistics before the president of the board of police commissioners. After all he is the vitalizing force, the mainspring of the police department. Orders from a man would be very stimulating to the conscientiousness of a policeman. 3. Lay the matter also before the state's attorney and have him publish his views in the paper to show that those arrested will be treated according to the law and not be dismissed with a feeble reprimand from magistrates."

What has been done in Baltimore can be done elsewhere. But we must not forget that the glorious Fourth must still be made the glorious Fourth, and if we take away explosives we must supply their place in the juvenile world. Hence games are especially to be encouraged; all sorts of sports and celebrations should be indulged in. The communities would do well to act in a body to amuse and instruct the children of the land on our nation's birthday.

TEA AND COFFEE.

CONCERNING these beverages one may well agree with Pope:

"Pleasures, or wrong or rightly understood,
Our greatest evil or our greatest good."

There are few substances in the whole range of alimention more wholesome, beneficent or enjoyable than properly prepared infusions of tea leaves or of the coffee berry, when taken in moderation during or after meals or in the late afternoon, to tide over the body fatigued with the day's labor until the dinner hour. Taken immediately before meals, or in excess, they are a grave detriment to health, oftentimes even exceeding in this regard the vicious effects of inordinate alcoholic libations.

Both tea and coffee have the property not only to lessen the sense of fatigue, but also that of hunger; like alcohol they destroy for the time being the appetite for food. Thus they tend to prevent such alimentation as is essential to building up and sustaining the organism. All teas, however good, have this action; but in addition to this some teas act injuriously upon the stomach itself by reason of the large amount of tannin which they contain. This excess of tannin, moreover, affects meats unfavorably, hardening them and making them indigestible; bacon is already hard and thus remains unaffected; fish and eggs are softer than meat and do not suffer so much from this tannic action. Bread and butter, toasts, rusks and farinacious foods go well with tea. The different kinds of tea vary much in the amount of tannin they contain. There is less of it in China tea than in India and Ceylon teas; the latter are preferred by many on account of their aroma and their stimulating qualities, but they are not so suitable for weak digestions as China tea. The India teas are particularly strong, and are generally combined with the other teas, to improve their flavor and strength.

There is everything in the way tea is prepared. Boiling water should be simply poured on the leaves and poured off again after standing for a few minutes. Thus the delicious aroma is preserved, and only a small proportion of the tannin is extracted. But when the leaves are boiled or stewed a great deal of tannin is dissolved out, with results decidedly unsalutory. Hard water containing calcium carbonate in excess does not make good tea. When water rich in iron, which has chalybeate properties, is used, ink, very serviceable in one's correspondence, but decidedly unhealthful when ingested, is the result.

Coffee is best prepared by grinding the beans just before the infusion is to be made. The water should be at 200° F.; nor should boiling be allowed after the water is poured upon the ground coffee. The aroma is lost and much tannin is evolved by boiling, or by allowing the infusion to stand for a long time.

FIFTY YEARS OF COAL-TAR.

PLANS are making in England, Germany, and in these United States for a celebration in the coming fall of the fiftieth anniversary of the discovery of the first coal-tar product by William Henry Perkin.

This scientist evolved the color mauve. The importance of his achievement was not so much in the production of this one color, as in the many developments in chemistry which were built upon his discovery. Before Dr. Perkin's time coal-tar was a practically worthless by-product of illuminating gas manufacture. Since he began his work, however, all the colors of the spectrum have been made from it. This "waste product" has since become the source of numberless chemicals and medicaments; of artificially prepared perfumes; of saccharine, which has three hundred times the sweetening property of sugar; of various preparations used to color fruit preserves attractively; of photographic developers; of powerful explosives. The whole of synthetic chemistry has indeed been revolutionized by the methods made possible by Dr. Perkin's

work. His original essay in this field was in 1856, when he tried to produce quinine artificially; in this work he was led to oxidize aniline, and the dyestuff known as mauve resulted. Before his day dyers depended entirely upon the natural colorings furnished by plants and animals. The founding of the artificial perfume industry arose from his discovery of a method for producing coumarin in the laboratory, this substance having previously been obtained from the tonka bean and sweet clover; many of us who smoke find the weed all the more delectable because it is flavored with this compound. Indigo was later manufactured along these lines. The industry of the production of colors has indeed become enormous; five German firms thus engaged have a combined capital of $24,000,000. A single factory employs 4,500 workmen, including 145 graduate chemists, all having received their doctor's degree, 175 engineers and 500 clerks. This firm alone owns 1,200 German and 1,400 other patents.

But much more is no doubt still to come. Possibly remedies curative of bacterial infections may be evolved; although, we confess, most of those that have thus far been presented had best be forgotten as soon as may be. A great chemist declares that we shall find explosives which will not endanger human lives in the handling, but which will be more effective than those we have at present; "we shall be able to preserve materials of food for any length of time without injury to the health of the consumer" (we doubt this last, and imagine there have been enough of such experiments).

It is certain that among all these discoveries which have been based upon Dr. Perkin's work, there are some for which he certainly would not care to be held responsible. However, their development are no fault of his. He should be honored for the vastly preponderating good that has resulted in coal-tar industries during fifty years past. And this will fittingly be done. For our part, a banquet will be held in his honor in New York on October 6, and a personal token will then be presented to him. A Perkins medal will also be established to be awarded annually to an American chemist for distinguished research work; and a great chemical library, bearing Dr. Perkin's name, will be instituted, having its headquarters in New York and traveling branches covering the country. England will present to him an oil portrait of himself which is to become the property of the nation at his death. A marble bust of the chemist is also to be placed in the rooms of the Chemical Society in London, and a Perkin research fund is to be established for the promotion of chemical investigation.

The denaturized alcohol bill, providing that alcohol used in the arts or industries, and which is unfit for drinking purposes, shall be free from the internal revenue tax, has become a law.

THE INFECTIVITY OF LEPROSY.

THIS somewhat unsettled question arises from time to time. It were well for the dignity and the honor of our profession if some definite statement could be formulated with regard to the degree of infectivity in this disease. We can hardly hope, however, that any such statement will be evolved out of the somewhat rancorous discussion that has recently been taking place. In the lay press, and for the edification of the laity, one eminent worker in this field observes of another equally eminent and equally earnest and scientific: "Dr. X; why, he is no leprologist!" When amenities have reached this stage, true science stands decidedly the loser.

No doubt certain insects are carriers of leprosy bacillus; among these are the mosquito culex sollicitans, the flea of the cat, dog and hog, and the Egyptian flea, pulex cheapis and pallida. Ashmead points out very definitely, however, that the mere carriage and inoculation of the bacillus lepra does not mean that the disease has been contracted. A person may throughout his life harbor this parasite in his flesh or beneath his skin without ever becoming a leper. (Here there is a very striking analogy to tuberculosis, in which disease practically every human being, in civilized communities at least, has harbored the tubercle bacillus, whereas everybody is not, of course, consumptive.) Ashmead requires (and he claims that many others are of a like mind) that in leprosy a distinct second stage must develop in the organs and tissues of the carrier or intermediary host before the bacillus lepra can transmit the disease. What that biological stage of the microphyte outside the human body is has not yet been determined. It is presumed that, in a given country, only after leprosy has passed through its period of sporacicity (50 to 100 years), and epidemicity (50 to 150 more years), does this disease make itself manifest to an alarming degree. It then happens that hundreds are suddenly stricken, for the reason that insect life has finally become the developer of the bacillus in some fashion that readily transmits leprosy by the infected insect. Ashmead predicts that in Louisiana this alarming stage is at hand.

The scientific conclusion thus far seems to be that something more than direct inoculation of the bacillus lepra from man to man is necessary for the prompt propagation of leprosy, despite the statement of many instances to the contrary. Some fifteen years ago there were a score of internes in the City Hospital on Blackwell's Island, whose factotum was a leper. He prepared the baths for these physicians, sold them postage stamps and cigarettes; and was intimately useful in many other ways. No one feared "Joe Evans;" nor has any one of the internes who for a number of years

he zealously served evidenced the disease. Still, as Ashmead points out, leprosy is a dangerous disease to have any association with, for the reason that the exact mode of transmission is not known. "Years after direct or indirect contact with a leper, even the most trivial, one may be surprised by finding that he is himself a leper."

Why is leprosy not nearly so prevalent to-day as it was in ancient or mediæval times? In the first place, much which we now know to be tuberculosis and syphilis was in those times classed as leprosy. Again: Leprosy has followed the law of all infections—its virulence has become diminished in the course of the centuries.

CONCERNING THE EGG.

THE silly season is well on; this fact is made evident by many incontestable and time-honored indications. For instance, the question, "Is life worth living?" has been successfully launched and is prompting the writing of many a letter to the newspapers, signed "One Who Knows," "Citizen," "Pro Bono Publico," "Verb. Sap.," and many another old friend. Meanwhile life keeps right on being lived—and enjoyed by the vast majority of us, despite some fairly heavy drawbacks.

That other question, "Should the word 'obey' be eliminated from the marriage ceremony?" is well under way, keeping the yellow press in flourishing condition. As if it made the slightest difference whether the word is there or not. The somewhat inconsequential question, "Whether clergymen should take long vacations?" has recently received a successful send-off, and no doubt will "be good" (as the newspaper writers put it) for many a column at so much per.

Eggs seem now to have furnished a new topic to be added to the best of hot weather trivialities. And this is odd; for the hen who lays them is a most serious minded creature, with no nonsense about her. She has no use for the inanities of life. For her life is real, life is earnest, life is not an empty dream; it is, on the contrary, a most serious business. She ingests corn and other suitable vegetation, metobolizes without ceasing, and achieves a truly stupendous output of eggs. She should have monuments erected to her honor in every village, upon every roadside. She is industry and beneficence personified; in which she is the absolute antipodes of her consort, who, except for one function, is throughout his life, no more than a cheap bluff, a barnyard hobo. The dietarians of the lay press seem first to have been upset by the President's breakfast, which, so it is stated, consists mainly of hard boiled eggs. Thus has arisen a furious argument over the comparative value of hard and soft boiled eggs; whether they were not best scrambled or schirred. Is the egg intrinsic and inevitable in the conduct of the strenuous life? Could Cambridge, who recently won a boat-race on an exclusive egg diet, have achieved this result on roast beef or any other diet? Into the discussion of such questions as these the most learned professors of dietetics, physiologists, bacteriologists, sociologists (of course, they are in everything), health commissioners, poultrymen, cooks, grocers, politicians and inspectors of public buildings have been drawn, and many more who were not asked have given their opinions gratis for the good of the world and the improvement of the race.

Among the many astute opinions, we submit that of Dr. Heine Marks (what fun his namesake the great Heine would have got out of all this), who addressed the St. Louis City Council. Speaking with great decision, he attributed the most appalling disasters to the unrestricted production of eggs. "I think there should be some law governing the fashion in which chickens and eggs are produced to-day." We agree with him heartily; the scheme of things should be so readjusted that the hen should have at least some of the pleasures in life which she so richly deserves, and that more of the work and stress of life be placed upon her comparatively worthless consort.

Meanwhile one of the things which makes life worth living for us is the gratification of expecting two delicious elliptical bodies besides our coffee cup every morning. Perhaps not hard boiled; soft boiled—three minutes and a half—would be our preference. The President is a safe guide in many things; but it would be slavish to follow him in everything.

Manuel Garcia, the celebration of whose one hundredth birthday was noted in these columns, died recently in England. He was the discoverer of the laryngoscope and one of the most famous singing masters of his age. Garcia's discovery was a mere accident. He found, in the shop of a Parisian instrument maker, a little mirror attached to a stick, with which it occurred to him to try to see his vocal cords in action with the aid of a ray of sunshine. This led him to an endeavor to place the art of voice building upon a scientific physiological basis. Although he communicated his ideas (states the *Evening Post*) in a lecture before the Royal Society, little attention was excited; and it was not until the quarrel of Türck and Czermak, some years later, regarding the invention of the laryngoscope, that the real inventor became known. In 1861 the Paris Academy of Science divided the Mothyon prize between Türck and Czermak, "but all laryngologists long ago discovered to whom the real credit for an epoch-making discovery belonged."

BIBLIOGRAPHICAL

A Compend of Operative Gynecology. Based on Lectures in the Course of Operative Gynecology on the Cadaver at the New York Post-Graduate Medical School and Hospital. Delivered by William Seaman Bainbridge, M.D., Adjunct Professor of Operative Gynecology on the Cadaver, New York Post-Graduate Medical School and Hospital, etc. Compiled with additional notes, in collaboration with Harold D. Meeker, M.D., Instructor in Operative Gynecology on the Cadaver, New York Post-Graduate Medical School and Hospital, etc. 12mo, cloth, 76 pages. Price, $1.00, net. New York: The Grafton Press.

This work, while particularly suited to the needs of post-graduate students operating on the cadaver, will be found of distinct value to the busy gynecologist. All gynecological operations of merit, with their latest modifications, are described concisely, but with sufficient detail to make the work decidedly practical. A number of original points of worth in the operative technic are embodied in the text.

The Practice of Pediatrics by Eminent Authorities. Edited by Walter Lester Carr, M.D., Consulting Physician to the French Hospital; Visiting Physician to the Infants' and Children's Hospital, New York. In one handsome octavo volume of 1014 pages, with 199 engravings and 32 full-page plates in colors and monochrome. Cloth, $6.00, net; leather, $7.00, net; half morocco, $8.00, net. Lea Brothers & Co., Philadelphia and New York, 1906.

This is one of a series of three companion volumes dealing respectively with Gynecology, Obstetrics, and Pediatrics, and jointly covering this whole domain in the light of the world's latest and best knowledge. The volume on Pediatrics is from the pens of well-known authorities in America and England, who have been selected as peculiarly well fitted to write on the subjects assigned to them. The authors have kept in mind, first, the clinical picture of each disease, and, second, the best methods for its treatment. This plan has allowed each contributor to give his own observations and the therapeutic measures which have produced the most satisfactory results. Naturally this adds to each contribution a personal element which is entitled to consideration, as the authors are, without exception, clinicians and teachers of wide experience.

Under the able editorship of Dr. Carr, a great fund of information has been arranged most conveniently for reference and study; over-lapping and repetition, so frequently found in composite books, has been avoided, and the volume furnishes a veritable encyclopædia of our present day knowledge in Diseases of Children, charmingly written and rich with the finest examples of the illustrator's art.

Diseases of the Nose, Throat and Ear. By Kent O. Foltz, M.D., Professor of Ophthalmology, Otology, Rhinology and Laryngology, in the Eclectic Medical Institute; Consulting Physician to the Seton Hospital, Assistant Editor the Eclectic Medical Journal, Author of a manual on Diseases of the Eye. 12mo, 117 illustrations, 643 pages. Cloth, $3.50. The Scudder Brothers Co., Cincinnati, O.

The author presents an excellent hand-book on the diseases of the nose, throat, and ear, and in addition gives the therapeutics employed by the eclectic physician. The book will be found useful to those who use this method of practice.

The Influence of the Mind on the Body. By Dr. Paul Dubois, Professor in the University of Berne. Translated by L. B. Gallatin. 12mo, cloth, 50 cents, net; by mail, 54 cents. Funk & Wagnalls Company, New York.

This interesting little volume, from the pen of a well-known specialist in nervous disorders, will be read, we are sure, with great interest.

Eczema. A Consideration of Its Course, Diagnosis, and Treatment, embracing many points of practical importance and containing 146 prescriptions, illustrating dosage in local applications. By Samuel Horton Brown, M.D., Assistant Dermatologist, Philadelphia Hospital, etc. 12mo, 105 pages. Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1906.

The author has arranged the common knowledge regarding this disease in a convenient form for ready use. Explicit directions are given for the care of a case in a most practical manner. There is an attempt to individualize the cases for treatment, as well as the means to be employed, and this is an advance in the right direction. The general condition of the patient is most properly emphasized and the use of local means is not over-estimated. We heartily commend the book for its purpose.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment in the Various Branches of Medicine and Surgery by leading members of the medical profession throughout the world. Edited by A. O. J. Kelly, A.M., M.D., with able collaborators. Vol. II. Sixteenth series, 1906. Octavo, 302 pages. Price, $2.00. Philadelphia: J. B. Lippincott Company.

As usual, this publication comes to us filled with excellent articles from able contributors and a wealth of expensive illustrations. To be appreciated, it should be examined. The publisher is spending a large amount of money to make the *Clinic* what it should be, and the rapidly increasing circulation shows that its value is being realized by the progressive men in the profession. Send for prospectus and examine the list of articles for yourself.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology in Cornell University, and Tracy C. Becker, A.B., LL.B., Counsellor at Law, Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo, with able collaboration. Second edition. Sold by subscription only. Muslin, $6.00; law sheep, $7.00. Vol. I. Octavo; 996 pages. New York: William Wood & Company, 1906.

This volume contains: First, an historical Introduction; second, the section on Medical Jurisprudence, or the department of medical law; and, third, the first part of the Thanatological Division of Forensic Medicine, including those subjects in which the object of inquiry is a dead body. The Legal Relations of Physicians and Surgeons, including their acquirement of the right to practice medicine and surgery; their legal duties and obligations; their right to compensation; their

privileges and duties when summoned as witnesses in courts of justice, and their liability for malpractice. The Law of Evidence, concerning confidential communications between Physician and patient. A Synopsis of the Laws of the Several States and Territories of the United States of America, and of Great Britain and Ireland, and of the North American Provinces of Great Britain, relating to the practice of medicine and surgery, from the latest statutes. Synopses of the existing statutes which cover the acquirement of the right to practice medicine and surgery in the United States, Great Britain and Ireland, and the Canadian Provinces. The Legal Status of the Dead Body. The Power and Duties of Coroners and Medical Examiners. Medico-Legal Autopsies. Personal Identity, including the methods used for its determination in the dead and living. Medico-Legal Determination of the Time of Death. Death by Heat and Cold, including insolation in its medico-legal aspects. Death from Starvation in its medico-legal aspect. The various specialties have been treated of by gentlemen who have devoted study and research particularly to the subject on which they write. This important publication consists of four large octavo volumes of from 800 to 1,000 pages each. They are printed in the best manner, and illustrated wherever desirable by line and "half-tone" engravings and chromo-lithographic plates. In paper, press-work, and binding they are examples of the best work. The work, as a whole, may be justly set down as standing in the very front rank of its class, and fully up to date in all respects.

Rats and the Bubonic Plague seem to be logically related, as we have intimated editorially. Early in 1905 the Secretary of State for India appointed an expert committee, headed by Dr. C. J. Martin, director of the Lister Institute, to study the problems connected with the propagation and dissemination of this dreadful scourge. It seems that the infection depends somewhat upon a peculiar species of rat and rat flea. Dr. Martin is reported to hold that "whether plague be primarily a rat disease and epidemics among human beings merely a participation of man in what is scientifically known as the epizoötic, the intimate relationship of the two is undoubted." Infected rats are the most important cause of the epidemic spread of plague. The common (black) Indian rat climbs up and lives in the roofs of huts as well as in "runs." It is always on the move among human beings, and either it, or its parasite, the flea, conveys the plague bacillus to the latter. The bacillus may be absorbed through abrasions, or may be ingested with food; the infected flea undoubtedly carries the bacillus into healthy bodies. Such questions as the habits of rats and their parasites, their breeding seasons, and the existence of subacute or chronic plague among them in the hot months, when the disease is not epidemic in India, are being closely studied by the committee; it is hoped that the existence and extent of the disease throughout the year will thus be determined. The total recorded plague mortality in India was 4,059,800; the deaths from it in 1905 were 950,600, as against 1,144,900 in the preceding year.

CORRESPONDENCE

SCEPTICISM AND CREDULITY.

To the Editor of THE MEDICAL TIMES:

We belong to a hard-headed, sceptic profession in a hard-headed, sceptic age. The man who believes all that he hears, deservedly gets the reputation of being unscientific and gullible, and he is told many lies, simply because of his reputation. Still, we are inclined to believe that, excepting for this innocent malice of imposing all sorts of deceit upon a credulous person, the man who goes through the world doubting what he hears and sees and differing from the general opinion of his fathers and colleagues, will deceive himself more often than the man who takes everything on trust, is deceived by others.

We well recollect the first lesson personally received as to the possible danger of scepticism, in its bearing on medicine. We were invited to a demonstration of the effects of cannabis indica, while a student. After accepting the invitation, we recalled the fact that the date was March 31 and that the seance was set for the next day. After taking pains to be absent, we learned that the experiment really was tried with interesting results.

Credulity assumes various phases, from the acceptance of conclusions based on a logical sequence from plausible premises up to the acceptance of a demonstrable absurdity or pure superstition. The fact that medicine is not a pure science but an application of various sciences, with an admixture of factors not mathematically controllable, renders it impossible to state, a priori, whether a claim is inherently absurd or not. In geometry, it is susceptible of demonstration that the circle cannot be squared. Certain mathematical societies have refused to receive communications dealing with this problem and that of trisecting an angle, by Euclidian methods. Yet, we understand that there has never been a demonstration of the futility of the latter; certain angles are easily trisected, and all by the use of higher curves than the circle.

In the case of medical problems, our attitude of scepticism or credulity most depend upon experience and judgment, and while an individual claim may seem unworthy of credence, the possibility of new discoveries almost invariably justifies an attitude of ultimate credulity. In short, the wise man is a sceptic, as was the doubting Thomas—ready to believe upon what each of us considers tangible evidence.

It has become the fashion to contemn certain medical aspirations. For example, it has been taught that absolute indications or methods of cure of a given disease (pathognomonic signs and specific remedies) are impossibilities. Yet, with certain qualifications, neither are inherently out of the bonds of reason. The fœtal heart beat is absolutely pathognomonic of pregnancy, although it is occasionally missed and sometimes imagined. Ballottement is pathognomonic of the general condition of a solid body suspended in a liquid or, at least, virtually floating and while it occurs in several quite diverse localities and, in any one, may be susceptible of more than one interpretation, it is strictly pathognomonic in the physical sense. So, too, the concensus of physical signs that demonstrate consolidation of lung may be considered as pathognomonic of pneumonia, according to one definition, although not necessarily of the particular form of pneumonia usually

considered typic. Moreover, even an expert may occasionally misinterpret the physical signs.

It is theoretically correct to consider the demonstration of the essential pathologic elements of a disease as pathognomonic—for instance, the specific bacterium of a disease, a blood mount of leucocythæmia, etc. Yet a bacterium may be adventitiously present from contamination or as an essentially harmless foreign body not capable of inducing the disease and it not infrequently happens that a single field of a blood mount may suggest a diagnosis of leucocythæmia, when the average blood picture does not justify such a conclusion.

With better means of securing samples of characteristic foci of disease, analogous to the extraction of a drop of blood for a blood lesion, to the harpooning of muscle for trichinosis, to the detection of tubercle bacilli or gonococci, and to the removal of bits of tumor for microscopic section, essentially pathognomonic signs may be multiplied. So, too, the refinement of pathologic chemistry up to the level of the detection of bile pigments in urine, may very reasonably be expected to reveal pathognomonic signs for many diseases for which, at present, we ridicule the existence of such evidence. For example, there was nothing essentially credulous in accepting the report of the trytophan reaction for cancer, on the strngth of the apparently authoritative preliminary reports. Even the fact that these reports have proved unreliable, does not render it particularly unlikely that some chemic test for the presence of cancer may ultimately be discovered.

In general, it may be said that the trouble in regard to pathognomonic signs is not in the signs themselves, but in jumping to the conclusion that they represent an ultimate cause, not inevitably connected with the immediate condition. For example, albuminuria and glycosuria are pathognomonic in an immediate sense, but not necessarily indicative of any one condition, such as nephritis and diabetes, respectively, which we may have in mind as a typic cause of the local abnormality. In the ultimate analysis, a pathognomonic sign is not a sign at all, but an actual, present, pathologic manifestation.

Just as surely as a certain definite cause produces a definite lesion of the body, we may expect that it may be removed or controlled by a definite remedy—in other words, by a specific. If we apply a definite name, as rheumatism, to a symptom-complex which has no invariable pathology or single causative factor, we cannot rationally expect to find a specific. Neither can we expect that the specific shall always be a drug, or that a mode of treatment genuinely specific shall always be adequate—any more than that every fire can be successfully checked by such applications of water as lie within the power of a fire department—or that the remedy which really jugulates the disease shall also stimulate the patient sufficiently to recover from the effects of the disease. It is no uncommon occurrence for a patient to die of essential weakness, after a perfectly successful operation, without hæmorrhage, anæsthetic complication or sepsis. So, too, a patient may die literally after the cure of pneumonia. Again, especially in the case of diseases due to living organisms, there may be no single chemical or force which can be applied in such degree as to kill the organism without injuring the host.

With the qualifications mentioned, the following means may be considered as strictly specific: Quinine against the malarial parasite, mercury against that of syphilis, salicylates against the diplococcus of rheumatism, and, also, partially, against the accumulation of waste products which cause an entirely different condition of the same name, thymol against certain intestinal parasites, and various well-known vermifuges against the respective gross parasites, antitoxin against diphtheria bacilli. We would confess to being credulous to the extent of considering it by no means hopeless that, for various other parasites, gross or microscopic, there may be discovered, either (1) chemicals in the ordinary sense of the word, or (2) by-products of the germ itself, or (3) vibratory forces, that may prove lethal for the parasite without disabling the host. In the opinion of many competent observers, colloid silver has proved efficacious in aborting many septic processes. Subject to a more careful consideration of the evidence on this point, it may be conceded that a step in advance has been taken toward the killing of septic germs in situ, without operation and subjection of the exposed pus to antiseptics virtually outside the body. If this has really been accomplished, it is not unreasonable to hope that there may, sometime, be perfected a chemical that shall prove lethal to pyogenic bacteria, specifically or generally, without seriously disabling the body cells, as for example occurs, more gradually but certainly—of course, with the provisos mentioned—in the case of malaria and syphilis. So, too, there is hope, by analogy, along either of the other lines mentioned.

A. L. Benedict, A.M., M.D.

Buffalo, August, 1906.

PTYALISM IN PREGNANCY.

To the Editor of The Medical Times:

The following case relating to the function of reproduction serves to refresh former experiences that normal signs of pregnancy by their exaggeration as to intensity or duration, may become pathological; in this instance a symptom which usually is of little significance presents itself in an aggravated form. I refer to ptyalism, a subject which receives but little attention from authors.

Mrs. F. X. ——, aged 29.—Primipara, excellent family history; previous occupation, teacher; was delivered of a stillborn child (at full term), the cause of which she was unable to tell. Moderate salivation was present during the entire pregnancy, but supposing this would terminate with confinement she endured it, but after delivery and checking of the mammary secretion, it continued in an aggravated form, being accompanied by general pruritus, especially at night, of a most tormenting character. The saliva flowed continuously, day and night, quite filling a chamber vessel in twenty-four hours, which I repeatedly witnessed. At this time, eight months after confinement, she called upon me. She was in a condition of extreme malnutrition and debility. Anæmia very pronounced, accompanied with œdema, which together with phlegmasia of the left limb added to her inability to obtain sleep, and with the blanched condition of the entire surfaces, external and internal, she presented an appearance as deplorable as she felt. For this condition was presented full doses of strychnia sulph., alternat-

ing with tr. ferr. chlor. freely. The salivary flow ceased unexpectedly and was soon followed in a comparatively short time by her menstrual function, but the pruritus was not thoroughly under control for some time. At present she is in good health. My only object in recording the case is on account of its infrequency. Perhaps others might suggest a better treatment.

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SUPPOSE THE OSTEOPATHY BILL HAD BECOME A LAW.

A bill sanctioning osteopathy passed the senate but failed in the house of New York and came dangerously near becoming a law. There was also under consideration an assembly bill greatly modifying the present status of medical practice by substituting for the "allopathic," homeopathic and eclectic examining boards a single board. The problem of dealing with various opinions as regards therapeutics is solved in the simplest and most unique method imaginable—the candidate is to be examined on all the scientific basic medical studies, such subjects as obstetrics, gynæcology, surgery, etc., and the community will then trust to luck that his therapeutic ability is sufficient.

Under the circumstances, this device seems thoroughly feasible and sensible. The state cannot, on the one hand, demand that even a majority sentiment as to therapeutic matters, which are necessarily matters of opinion, shall be final for every practitioner. On the other hand, if it recognizes, as it now does, two minority schools of practice, it cannot consistently refuse recognition to other minority bodies, each claiming some peculiar tenets as to therapeutics in opposition to the majority of the profession. No matter how absurd a system of medicine may seem to this majority, and whether it rests on a single or multiple basis of treatment and whether its basis is material or more or less supernatural, if the claimants are moderately numerous, well behaved and have a respectable lay clientele, it is obvious that they will ultimately succeed in obtaining legal recognition.

The proposed osteopathic law must nominally correspond in requirements with those in force for the three recognized schools of medicine. If it required obviously less general preparation and less time of professional study, it could not stand a chance of passage. But, by admitting to license those already engaged in osteopathic practice, it follows a recognized precedent and still has a *raison d'être.*

Just as soon as such a law becomes operative, it inevitably will follow that students attracted by specious arguments to the school in question will include an increasing number of well-educated men and the very fact of requiring four years of study of a technical nature, even if the fundamentals of the school in question are as absurd and unscientific as possible, will breed a class of genuinely scientific men. Such men will naturally gravitate toward other scientific medical bodies and will actually be out of harmony with the sect to which they are attached. As the school becomes respectable through the influence of such men, loses the charm of novelty and the attractiveness of a persecuted and martyred sect, it will naturally lost it *raison d'être.* Science breeds individual opinions, but cannot foster exclusive sects, as it is intrinsically catholic and broadening.

Thus, the tendency will be to recognize from time new schools of medicine, popular because they are fads and deriving strength by their very weakness.

The general profession of medicine, especially in a free country, and in any country, so long as it is composed of well-trained minds, must always afford ample scope for true originality, and the only logical and sound legal basis for the medical profession must be one that demands careful training in matters of general education and of indisputable scientific fact, but that leaves the practice and methods of the individual untrammeled. *

RETROSPECTIVE THERAPEUTICS

The scientific food of the future was recently discussed by Professor Berthelot, of Paris, who made some rather startling observations: Our milk, eggs and flour will eventually be made in factories; already eggs have been manufactured artificially. By means of alizarin a great agricultural industry was destroyed. This chemical compound is the principle of the madder root, from which were extracted the juices necessary for dying cloth and different materials. The madder root was grown to an enormous extent in Persia, India, and the Levant; whence it spread to Spain, Holland, and the Rhine provinces. It was used very largely in continental Europe, and thirty years ago its annual importation into England amounted to more than six million dollars. The madder fields have, however, now ceased to exist in Europe, by reason of the new and synthetic process of manufacturing alizarin. Pure indigo is now manufactured direct from its elements; the natural product is now almost unknown. Theine and caffeine are obtained from different sources; yet as tea and coffee, they are chemically identical in construction. Theobromine (the essential principle of cocoa) and cocoa itself have been produced in the laboratory. Berthelot has obtained the pure nicotine of the tobacco through the treatment of salomine, a natural glucoside, with hydrogen. Tobacco is but so much vegetable fibre in which nicotine is largely stored. So it is conceivable that the tea plants, the coffee shrubs, the tobacco plants and the cocoa trees may follow the madder root into limbo, states *The Arena.*

Vanilla, naturally the product of the vanilla or tonka bean, can now be produced chemically from artificial vanillin much more cheaply than by the old system; flowers, perfumes, colognes, rose water, vegetable odors, scents of medicinal value—all these things will in the near future be manufactured in the laboratory—so declares the enthusiastic Berthelot. He, moreover, tells us that science is soon going to utilize the nitrogen in the atmosphere as a motive power. But has not some one recently warned us in harrowing terms that our supply of atmospheric nitrogen will, in the course of nature, have disappeared within a million years or so, making animal life impossible? Were it not better, then, to conserve this nitrogen, so that the impending catastrophe may be averted?

Manifestly, all things considered, if we do not very soon take these chemists in hand and suppress them inexorably, they will achieve the disappearance of everything that is useful and beautiful from off the face of dear old Mother Earth.

The commoner microscopic findings in Urinary sediments have been studied during ten years by L. N. Boston, who recently submitted deductions before the Philadelphia Medical Examiners' Association. L. N. Boston knows of no method by means of which alkaline urine may be studied with definite conclusions. Alkaline sediments probably signify acute processes. The stroma or initial mold or hyaline substance of the casts is dissolved when in an alkaline medium. Casts have repeatedly been found in a neutral urine decidedly alkaline, and in this case they disappeared two hours later.

Inorganic sediments, such as uric acid and calcium oxalate, disappear in alkaline urine. *Amorphous inorganic sediments,* such as the urates, readily precipitate in the cold; unless this precipitation takes place at a temperature of 60° to 70° we cannot say the urates are in excess. It is impossible to make deductions from a microscopic study of uric acid. Crystals may be precipitated in urines of low specific gravity and where the actual amount of uric acid excreted is below the normal. Crystals of *calcium oxalate* occur in cases of vesicular pyelitis and calculus; also when an indicanemia is present. These crystals are most common in the urine of high livers who exercise but moderately. *Hematoidin* crystals are oftenest found after traumatism of the kidney; and next in pregnancy they may appear during the course of a renal tuberculosis.

As to organic sediments: Boston has never been able to say positively that *epithelial cells* come from any particular portion of the genito-urinary tract; these cells are probably renal in origin only when they cling to the surface of a renal cast. *Blood corpuscles* have a variety of sources and are the result of pathological conditions; during menstruation, however, they are normal constituents of the urine. The actual formation of *urate casts,* as also whether or no these casts are formed in the urinary tubules, are propositions open to question; their actual clinical significance is not known. They have been found in the course of acute bronchitis; and are not unusual in the urine of persons who show no other evidence of disease. *Hyaline casts* are found most commonly in chronic intestinal nephritis; they may occur also in other forms of chronic and less often in acute nephritis, catarrhal jaundice, carcinoma of the liver, stomach or intestines, and in anæmic conditions. They are not uncommon during the latter months of gestation and in eclampsia; such women generally make complete recoveries and oftentimes do not show casts and albumen at subsequent pregnancies. The urine may contain hyaline casts for from ten to thirty years without pronounced albuminaria or appreciable discomfort. The presence of these casts does not necessarily mean a permanently damaged kidney. Highly *granular casts* are short, thick and common in connection with acute renal disease; yet the exceptions are many. Large finely granular casts may appear in exclampsia and chronic peneuchymatous nephritis; the narrow variety suggests chronic interstitial disease. Boston cites the case of a girl who, for four years up to her eleventh year, voided daily about 20 ounces of albuminous urine, with many hyaline and granular casts. For over two years the urine has been normal in this case, which is an example of many in which renal function has been perfect after subacute and chronic nephritis. *Blood casts* indicate renal hemorrhage, but do not necessarily imply permanent structural change. Epithelial casts evidence an inflammatory process in the kidneys which is of sufficient severity to destroy the epithelial lining of the urinary tubules; they are commonly found with the exanthemata, but do not necessarily imply permanently damaged kidneys. *Mucous cylinders* probably signify the response of the normal kidney to some irritant. *Carbonate of lime* is very infrequently found in alkaline urine in the form of spherules or crossed drumsticks; in urine rendered highly alkaline by ammonium carbonate set free by decomposition of urea, calcium carbonate occurs in small quantity but in an amorphous form. *So-called phosphatemia* is a condition in which the phosphates and carbonates are precipitated before or immediately after the urine is passed; but there is no increase in phosphoric acid. The precipitation is probably produced by the alkalinity of the urine. Phosphatemia characterizes neurasthenia, hypochondria, chronic articular rheumatism and like diseases.

Nutrient enemata are the subject of an important editorial in *The Therapeutic Gazette* (July, '06). Edsall and Miller have found that most of the solids in rectal injections remain practically unabsorbed; it is only the saline constituents which are utilized. A normal salt solution would therefore do as much good by rectal injection as the various nutrient enemata now in common use. Boyd and Robinson (*Scottish Medical and Surgical Journal,* March, 1906) have considered the question: Given even a reduced standard of dietetic requirements, how far does rectal feeding meet these requirements? and have concluded that the most that can be absorbed amounts to 645 calories at a maximum and 240 at a minimum—that it is possible, in other words, to introduce into the body by rectal injection no more than a quarter of the nourishment required to maintain nutrition. This statement holds true only under the most favorable circumstances; in the presence of irritable bowels or diarrhœa the method is of practically no value.

Another important point is that when employed in the treatment of acute gastric diseases, nutrient enemata interfere with complete gastric rest (such as is essential for recovery) by inducing gastric secretion, and yet do not sufficiently nourish the patient. Umber, in a patient upon whom gastrotomy had been performed found that after a rectal injection there was free gastric secretion with a total acidity of 30 and a free hydrochloric acidity equalling 20. If the injection be given, it should be of sufficient bulk to get well up into the colon, since it is thus absorbed much more rapidly than if allowed to remain in the lower bowel. Indeed there is reason to believe that it may occasionally slip past the ileocecal valve, where, of course, it would be of much greater benefit. Boyd and Robinson conclude, however, that an enema cannot greatly help a patient in poor condition. This is an important point. We rather deprecate an excess of zeal which may still further weaken a moribund patient and add to his distress, without benefit to him; this is too often done. The surgeon may wish to bring a sufferer from œsophagral or pyloric obstruction into a condition of improved nutrition before operation; this it seems cannot be produced by means of rectal injections. Such patients may gain weight by this means, but probably by the absorption of water from the intestine. And

after severe hemorrhage or persistent vomiting, as in pyloric obstruction or gastric ulcer, the tissues are suffering greatly from a deficiency of water; to this fact the increase in weight is due. If it is concluded that rectal feeding is essential the carbohydrates and fats had best be employed, rather than the inert proteids. With regard to carbohydrates: Pure dextrin has been used with excellent results, being well absorbed and producing no ill effects, such as bowel irritation or alimentary glycosuria. The disadvantages of fat in rectal feeding seem to be the wide difference of absorptine powers in different individuals; when well absorbed it should prove most valuable, but the absorption can not be foreseen in any given case. The yolk of egg is the best form; if prepared fat is used it should be a fine emulsion of a fat of low melting-point. Pure olive oil may be used, a small quantity being soaponified and used to emulsify the whole. A good formula is: The yolks of two eggs, 30 grammes (about an ounce) pure dextrose, 50 grammes (℥1¼) common salt and pancreatized milk (Fairchild) to make 300 c. c. (℥x). The method of administration and the size of the enema are both important points. Nutrient enemata should never be administered with a syringe. Substances rapidly injected into the bowel will as promptly be returned. The enema should be very slowly siphoned in by means of a soft rubber catheter and a small-sized filter funnel; if there be bowel irritability a small dose of morphine should be added to the injection. The daily cleansing of the bowel with a saline injection is, of course, an absolute necessity. The amount of the nutrient injection commonly used is from 4 to 6 ounces—probably too small. If the enema be given slowly, 8 to 10 ounces can be retained; and the patient absorbs at least sufficient water and does not suffer from thirst, a prominent difficulty when small injections are used.

Autointoxication is probably far more frequent than is generally considered to be the case; no doubt many a perplexing syndrome could be explained upon this basis. There is clinically a group of cases in which the kidney has become reduced in size, the cortex being involved in the reduction; in many cases the blood pressure is raised, and then "uræmic symptoms" are spoken of (H. B. Shaw, *Lancet*, May 26, '06). The kidney tissues, especially the cortex, can, when fresh, cause a rise of blood-pressure; the actual substance responsible for this effect has not been isolated. It is not crystalline, but of a colloid nature and cannot be dialyzed; it is very labile and seems to be destroyed when the kidney substance has lost its freshness. Maintained hypertension may, therefore, be due to the entrance of kidney substance into the circulation; here may also be the explanation of the raised blood pressure which occurs so often in uræmia. No doubt the cerebral manifestations of uræmia are due to arterial spasms; the toxic substance derived from the kidney acting upon the peripheral centres of the vasomotor nerves. (The cerebral arteries possess, of course, a nervous supply.) The effect of the kidney substance may be lost when the organ has undergone autolysis. The latter is an accepted physiological agency by which the chemical changes of the body are carried on. Autolysis takes place when tissues are cut off from the circulation. If the blood supply to various organs is cut off by arterial disease the organs must eventually atrophy by a process of autolysis. This process is allied to digestion and is due to the existence of intracellular proteolytic enzymes. No derivative of autolysis is known which can cause a rise of blood pressure. On this account kidney-substance can alone be the cause of the rise of blood pressure met with in renal disease; it must enter the circulation before autolysis has occurred, during the period of maintained vitality. All tissues which have undergone the initial process of autolysis may yield such substances as proteases, histones, nucleinic acid and choline; thus they can yield to the circulation material which is capable of exerting a fall in the blood pressure. The action of kidney substance upon the circulation, resulting in a rise in pressure, explains the common occurrence of hypertrophy of the middle coat of the arteries.

The prognosis in insanity is better when there is a single cause than where there are several (Jones, *Brit. Med. Jour.*). There is always some mental weakness after an attack, nor is there any such happy issue as a complete and permanent recovery. Tuberculosis is one of the most frequent causes of death in insanity, being responsible for more than 16 per cent. of deaths in institutions for the insane. Certain types of insanity are incurable from the start; such are the forms accompanying general paralysis, cerebral tumors, advanced tuberculosis, malignant disease, diabetes mellitus; diseases necessarily fatal and attacking the great internal organs; epilepsy, paralysis from hemorrhage, embolus or thrombus; paranoia or chronic delusional insanity; alcoholic insanity with hereditary predisposition; senile dementia; and all kinds of congenital mental defects. General paralysis is peculiarly unyielding, though some forms are more chronic than others (Dana believes that some cases may be cured if treated very early). Acute delirious menia is most fatal; it is a condition fortunately rare. The prognosis is in general terms better in cases of insanity where there is a single cause than where there are several causes. An acute inflammation may cause the recovery of a chronic case. Attacks of long, slow incubation are of unfavorable prognosis. Certain signs are favorable to recovery; such are: Normal sleep; a return to the normal mean average bodily weight; a return of the natural facial expression and appearance; the revival of natural affections; the patient's interest in his personal appearance; the consciousness and recollection of having been ill.

The Automobile as a Financial Leveler.—Did it ever occur to any of our readers that the automobile is destined to play an important part in offsetting the tendency toward the accumulation of great wealth in a few hands? We attempt no statistical study, but offer the suggestion that the wealthy class has never had a toy quite as expensive, widely used and dangerous as the automobile. It is less than ten years since the automobile was a matter of forgotten experimental history and a dream of the inventor. To-day there is scarcely a good-sized city that has not salesrooms, garages and repair shops, manufacturies and private stables, representing millions of dollars distributed in the form of liberal salaries and the highest wages for skilled labor. These millions are a direct levy upon the wealthy class, in the interests of men who would otherwise be earning much smaller salaries and wages. The good roads movement, which also, in the long run, and somewhat indirectly, tends to equalize wealth, de-

pends largely upon the interest in motoring. Aside from these economic tendencies of the automobile, we are inclined to believe that fatal accidents will, in the course of another decade, have an appreciable influence simply by subjecting large estates to inheritance taxes and to assessment for ordinary taxation at something like their true valuation. The death of a rich man is by no means, in and of itself, a sociologic benefit, even though it distributes a large single estate among a number of heirs and tends to check the aggregation of industry into a monopoly. To a very large degree, an enormous fortune, made by the enterprise of a hard-working, ambitious man, creates wealth for the entire community. Very little real wealth is represented by cash and very few large fortunes are, in any true sense, amassed by taking money from the poor. Still, there has developed, even in America, a considerable class of unproductive, fast-living, parasitic men and women, whose value to the community is a negative quantity. The sooner the wealth of this class is distributed, the better for the community and it would seem, from the press reports of automobile accidents, with due regard to distortion of facts by the yellow papers and the charitable evasions of more conservative sheets, that the automobile is playing a considerable part in shortening the lives of the undesirable rich and in causing their property to be distributed. Aside from the rather direct sociologic benefit of breaking up one large estate into a number of smaller ones, the probate court is one of the most efficient means which assessors have of estimating the value of taxable property, not in the form of real estate.

Phagocytosis and Opsonins.—This important subject is discussed by Hektoen (*Jour. A. M. A.*, May 12, '06). Phagocytosis of many bacterial and other cells by the leucocytes is dependent on special substances, normal and immune, which become attached to the cells involved and so change them in some manner that they are taken up readily by polynuclear leucocytes in vitro. Wright and Douglas have shown the presence of such substances (which they have called opsonins) in the blood and in other fluids. It has been found that the variable factor is the serum and not the leucocytes. The sera of the higher animals normally contain opsonin for many different bacteria. Normal human serum contains opsonin for staphylo-, strepto-, meningo-, pneumo-, and gonococci; the influenza, diphtheria, anthrax, comma and the pest bacilli; and probably many other pathogenic and non-pathogenic bacteria. It is not yet determined whether this wide range of opsonin action is dependent wholly on a common opsonin or on several more or less specific opsonins. It has been shown that the blood of certain animals immunized with blood serum contains a substance which, by acting on blood corpuscles, renders them subject to phagocytosis by leucocytes. Immune opsonins act primarily on the bodies against which the animals have been immunized. Phagocytosis is essentially amœrboid movement, by means of which the object consumed is enveloped. The action of the opsonins consists in so changing bacteria, and other cells, that by chemical, electrical, or mechanical, means, the latter diminish the surface tension of leucocytes, and thus bring about phagocytosis. Again, specific anti-opsonins are produced under certain circumstances, which may diminish or inhibit normal phagocytosis. The important question lies in the value of the opsonic index in the successful treatment of infections by means of the inoculation of bacterial vaccines. These vaccines should be administered when the opsonic is high and in properly adjusted and interspaced doses—to maintain the antibacterial power of the blood at a high level by controlling the effects by means of the opsonin index. Hektoen states as follows the reason why opsonin action of normal and immune is for the present to be regarded as connected with distinct bodies. Normal serum may possess lytic power, but not opsonin, and vice versa; immunization may give rise to opsonic substances, but not to lytic or agglutinating; heat may destroy opsonic power, while the lytic amboceptors remain intact, and vice versa.

The Bronchial Glands and Pulmonary Tuberculosis.—F. Weleminsky emphasizes the now fairly established view that these glands stand in a pathogenic relation to pulmonary consumption. He infected guinea-pigs with tuberculosis at various points and later examined the bronchial glands. He found that the infection never occurred through the blood, but always by way of the lymphatics. (Here Weleminsky is probably in error; many other observers have correctly claimed that the blood channels may ab initio convey the infection.) The bronchial glands seem to be the terminal reservoir not only for the lung lymph, but also for that from the rest of the body, before it is poured into the circulation. When animals were inoculated in the peritoneum, rectum or subcutaneously in the groin, it seemed at first as if the infection followed an arbitrary, erratic course; but the discovery of hidden glands showed the regular sequence of the progress of the infection, without an exception, in Weleminsky's last 300 experiments. The bronchial glands are in some sort a lymphatic heart, in which the lymphatics from all sides discharge their contents, including tubercle bacilli, from remote points of entry.

The Iodides are alteratives, declares J. Burnet (*Lancet,* May 5, '06). They have long been used against syphilis and scrofula; and, more recently, gout, rheumatism, aneurism and arteriosclerosis. The iodides were formerly supposed to act by dilating arterioles and diminishing blood pressure, but they have no effect on the blood pressure or pulse, although they promote coagulation of the blood. Iodipin or iodized sesame oil is most effective injected under the skin; there is no gastric disturbance and the iodine is slowly set free by oxidation. This drug relieves arterioselerosis by diminishing the uric acid dissolved in the blood and thus relaxes the arterioles and relieves aneurism, if syphilitic, by removing pathological effusion and counteracting the poison. In angina pectoris a drachm must be given daily for months. It is most useful in chronic pulmonary diseases, especially fibrosis and emphysema, relieving dyspnœa and liquefying secretion; here it is best given in 15 grain doses at bedtime. Ten grain doses every two hours are appropriate for bronchial asthma, relieving spasms and freeing the blood from uric acid. Its autoxic properties and eliminative action are excellent in syphilis, especially of the nervous system and when headache is pronounced. In tabes 3ii have been given daily with excellent results. It has also been given successfully in cases of malaria, puerperal fever and erysipelas. The iodide of potash is indicated against chronic rheumatism, neuralgia, lumbago and sciatica; here it is best combined with the

salicylates. In cases of effusion, especially from interstitial nephritis or cirrhosis, the iodides are often of service. In lead or mercurial poisoning they remove the metal from the tissues and cause its excretion. In simple goitre they are very useful if employed early; in exophthalmos they are of no use whatever. The sodium salt is less depressing than the potassium salt.

The Causation of Acute Rheumatism.—L. F. Frissell (*Med. Rec.*, May 12, '06) believes that we must look beyond the common joint affection for a clear idea of this protean disease, which attacks also other tissues —the skin, the pleura, the heart. Granted a point of entry, probably the tonsil (tonsillitis is very frequent in rheumatism), the various conditions vaguely called rheumatic, as well as the typical acute articular attack, seem best explained upon the basis of a blood infection. Assuming such an origin, the localization of the symptoms is readily accounted for by the bacterial embolus or local toxic action. In regard to the nature of the specific organism Frissell presents five possibilities: An infection caused by the ordinary streptococci or staphylococci, with their virulence in some way decreased; infection by a specific bacillus, a mixed infection with bacilli and cocci; an infection with the specific coccus; an infection caused by one of a group of closely allied organisms, probably diplo or streptococci, which cause various grades of arthritis trouble. This last theory, which Frissell favors, reconciles the belief in the specfic coccus with the belief in the attenuated pus coccus as the causal agent.

The wonderful capacity of the brain for vicarious working is pointed out by Anton (*Monapebr. für. Psych. u. Neurol.*, Jan., '06). Oftentimes after great loss of brain substance one is unable, when many years have transpired, to detect any functional disturbance. The nervous system of lowly organisms can regenerate parts, but this power is lost in the more highly organized. However, there is in the latter a wonderful power of adaptation, in that if a part be lost another part will take up its function. Case: A highly cultivated gentleman died in the possession of all his faculties; his brain was found after death to contain numerous white softenings due to arterio-sclerosis. Again, Ewald operated upon a dog, removing one labyrinth, with recovery; then the other labyrinth was removed, with recovery; then one motor cortex for fore and hind limbs was removed, with recovery. Finally the motor cortex of the opposite side was removed, and this operation was followed by death. This experiment proved that the sensorio-motor cortex could take up the function of the labyrinths in addition to its own; and when both motor cortices were removed, not only were their normal functions lost to the animal, but also those functions which they had taken up after destruction of the labyrinths. Lucian's experiments showed the same substitution of function. Among human beings the educated deaf, dumb and blind, such as the Misses Keller and Bridgman, are examples *à propos.* Anton finds that the part taking up the lost function never performs it quite so efficiently as did the original part; and it becomes much more easily tired.

The Etioligy of Tumors.—These growths never occur in perfectly normal tissues. (A. H. Levings, *Clin. Rev.*, June, 06). The dermoids and teratomata are usually congenital and are due to inclusion of one or more of the germ layers. The cysts are due to a variety of causes—obstruction of a duct or of an asinus of a gland; stimulation of epithelial nests or vestiges; inflammations; and parasites. Solid epithelial tumors also occur in epithelial nests as a result of stimulation or irritation. The solid connective tissue tumors are often caused by direct injury, or irritation, or chronic inflammation. The papillomata are the result of irritation; the granulomata of the irritation incident to the presence of germs within the tissues. The growths are always made up of connective or granulation tissue. While injury and irritation seem to be exclusive factors, there is evidently something more potent than this. Whatever this energy or organism may be, it must lie within the cells and be capable of exerting its influence upon both epithelial and connective tissue cells. This influence differs markedly from that of the organism of the granulomata. Possibly this misplaced energy acts in two ways: By changing the relationship and removing the restraining influence of the adjacent cells; and by inciting the cells implicated to proliferate superabundantly. This view expresses in substance the theory of Rebbert.

Read the canned food labels advises Dr. Olsen, of the Brooklyn Polytechnic Institute, who declares that few women take the trouble to examine the cans, and that "poison" might be written in large letters and still escape attention. Ninety per cent. of the preserves sold in the market are of the fake apple pulp variety, in which this constituent and chemical flavors are substituted for fruit. Many a jelly cannot claim a currant bush as an ancestor. Many a guava jelly proves on examination an utter fraud, while the taste carries no suspicion. Many canned goods, especially corn, are preserved with boric and benzoic acid and formaldehyde; such products spoil quickly. Dr. Olsen is, however, one of the conservative leaders of the pure food campaign. He finds that some of the preservatives are not in themselves seriously harmful; it might be possible to drink all of the boric acid in a can of fruit without sustaining any injury. But here lies the real danger. The manufacturer using a deadly poison would come directly under the ban of the penal code, while the housekeeper would not allow it in her kitchen. Preserved foods are less digestive and less nutritious than natural ones, neither the flavor nor the odor is fresh, and these two elements enter largely into nourishing food. Preservatives often make diseased food marketable; eggs preserved with boric acid will keep eighteen months, while formaldehyde will remove all odor from those already spoiled.

The psychoses of heart disease are divided by House (*Jour. A. M. A.*), with regard to etiology, into: Local sensations usually not painful, as palpitation, irregularity, tachycardia, bradycardia or excessive loudness; decided pain, as in angina, endo or pericarditis; circulatory disturbance, as vasomotor constrictions or feebleness of heart action with cyanosis; secondary cerebral lesions, as from embolus, or œdemas and effusions from incompetency. House would make the following classification according to the symptoms: States of fear, apprehension and panic, alternating with depression and irritability, without active delusions or hallucinations; delusions founded on misinterpretations of local cardiac phenomena, such as pain; active hallucinations from circulatory disturbances involving sensory organs; dementia from secondary lesions in the brain.

Neurasthenia and Excessive Lights.—Woodruff's observations (*N. Y. Med. Rec.*, Dec. 23, '05) are based on the physical law that the effect of the short waves is always destructive and never constructive. Nature has promoted the various races with a degree of pigmentation suitable for the average intensity of light in their respective native regions. Blondes are indegenous in the dark, gloomy northern countries; brunettes inhabit almost universally the tropical latitudes. The latter type when it migrates in the course of time to the more sunny regions tends to become extinct. The excess of sunlight to which the people of many parts of this country are exposed is distinctly injurious and is a potent cause of neurasthenia—a condition more prevalent among blondes than among brunettes, worse in cities than in the country, and either vastly benefited or cured by removal to dark, cloudy climates.

Jacksonian Epilepsy is exhaustively discussed by C. K. Mills (*Boston Med. and Surg. Jour.*, April 26, '06). This form of spasm has been an important or deciding symptom in successfully fixing the site for operation in the case of a cerebral tumor. Mills has had a number of cases of cysts of the motor region, in some of which unilateral convulsions or monospasms have been present, these evidently being due to the unstable condition of the cortex surrounding the cyst. It has been possible to expose the cyst, cut away its roof and so lessen the frequency and severity of the attacks. He gives several histories illustrating the importance of Jacksonian spasms in gross lesions of the cortex, especially in tumor and localized meningitis; in these cases other evidences of gross lesion in addition to the spasm were present. Such were monoplegia or hemiparesis with exaggerated reflexes on the side of the body in which the localized spasm occurred. With regard to symptomatology: Tumors situated in other parts of the brain than the motor cortex may cause Jacksonian epilepsy; other lesions besides tumors situated in the motor cortex may cause this spasm, which may occur also in toxic and other disease in which no demonstrable focal lesions are present; a spasm closely counterparting the Jacksonian type may be observed as a reflex or a hysterical disorder; or it may be simply an integral part of the entire expression of a case of idiopathic epilepsy. Jacksonian epilepsy, apparently, of the motor area type, may be observed with cerebellar tremors. The gross lesions of the motor area which cause monospasm or hemispasm counterparting that produced by tumors are depressed fracture, localized meningitis, meningeal or cortical hemorrhage, local hemorrhagic eucephalitis or cortical polioencephalitis and focal necrosis or embolism, including cases associated with general arteriosclerosis.

Stiff and painful shoulders are considered by E. A. Codman, who presents a series of excellent photographs (*Bost. Med. and Surg. Jour.*, May 31, '06). A characteristic complaint in such patients is the inability to put the arm to the nape of the neck or behind the small of the back. Women cannot "do up" their back hair; men cannot button the back of their suspenders. Often rheumatism, fibrous ankylosis, deltoid paralysis or perianthritis are erroneously diagnosed in such cases. Codman lays stress upon abnormality of the subacronial or subdeltoid bursa, which is indispensable in abduction and rotation of the arm. This bursa may be inflamed as a result of trauma; fixation, as after certain fractures and operations on the breast, hand and arm, and sepsis. Most minor lesions of the shoulder joint involve the bursa; few involve the shoulder joint. Acute cases must be treated by relieving pain, physiological rest during the inflammatory stage; and later, the prevention of adhesion of the inflamed surfaces. Codman has invented a special splint, which he describes for chronic cases. This splint effectually prevents the reformation of adhesions, holding the arm, as it does, in abduction and external rotation, thus bringing raw surfaces opposite healthy ones.

Stammering is treated by Kenyon (*Med. Rec.*, June 16, '06) first by educating the patient so that he may consciously learn how to manage his speech apparatus; second, by discipline, so that he may overcome a firmly rooted and stubborn habit; by correction of the general organic disability and of peripheral abnormalities, in order that the delicate mechanism of speech may not be physically interfered with. The patient must at once study normal speech from the standpoint of the technique of its production; and the knowledge acquired must at once be put into practice. Speech is now no longer automatic, but becomes a function governed in detail by the consciousness and the will. The patient must gain control of his speech mechanism and direct it in detail. Even then the subconscious nervous structures must be held well in hand until they can be entrusted to assume control. This defect should be corrected early; it is essential that both instructor and patient be firm of purpose.

Pruritus Ani afflicts the male in 95 per cent. of cases (L. H. Adler, *Am. Med.*). The patients are nearly always more or less neurotic and of a bilious temperament. All exciting causes must be removed, and the patient's habits of life regulated before local treatment is attempted. Every day ʒi to ʒijss of the following is injected into the rectum: ℞. Fl. ext. hamamelis, ʒi; fl. ext. ergot, ʒij; fl. ext. hydrastis, et tinct. benzoin comp., aa ʒij. Upon the first visit, if the perianal skin is dry and tough, the entire surface should be painted with a concentrated solution of silver nitrate (gr. 960—ʒi aquæ). This may be repeated at intervals of a few days to restore the skin to normal. After this is accomplished the full strength citrin. ointment is to be applied daily for the first two or three weeks and thereafter on alternate days or twice a week. This treatment may have to extend over six months or even longer.

Scarlet fever infection was conveyed in an unusual case cited by Poynton (*Brit. Med. Jour.*) A child was taken sick with scarlet fever. When he desquamated whole casts of his fingers came off. These were saved in a box. A year later, after the family had moved to another town, the box was opened and the casts shown with pride to a family who were visiting. A few days later three of the visitors developed scarlet fever and one died. It is said that the present system of medical school inspection in New York City had its origin in a similar incident. A school child who had had scarlet fevor returned to school while desquamating. She generously distributed casts from her arms and fingers among her fellows, with the result that an epidemic of scarlet fever developed in the community. This led to stringent inspection by the Department of Health.

MISCELLANY

The prophylaxis of yellow fever requires four precautions: To prevent the propagation of *stegomyia;* to prevent this form of mosquito from getting access to yellow fever victims; to shield healthy persons from *stegomyia* that have been infected; to kill every mosquito that has found a lodgment in a house where there has been a case of fever.

Dr. Masuno, a prominent Portugese oculist, suddenly became unconscious while reading a paper before the section on ophthalmology at the Lisbon Congress. He died while comatose. He was independent of practice and devoted himself to the treatment of the poor, for whom he had founded a free private hospital and training school for the blind.

Tuberculosis of the Eye is comparatively rare (W. H. Wilder, *Ill. State Med. Jour.*). Probably many diseases of the cornea, iris and ciliary body, in which gross tubercular lesions do not develop, are excited by the toxins of the bacillus. Whether tuberculin has the same diagnostic value in these conditions as in the gross lesions has not been determined; its use is safe and in large measure reliable; no doubt it is a valuable therapeutic means.

Adults eat far too much declares Osler, in "Counsels and Advice," the book which was edited by Dr. C. L. B. Camac. "While temperance in the matter of alcoholic drinks is becoming characteristic of Americans, intemperance in the amount of food taken is almost the rule. Physicians are beginning to recognize that early degenerations, particularly of the arteries and the kidneys, leading to Bright's disease, which were formerly attributed to alcohol, are due in large part to too much food."

"Would you care to paralyze your leucocytes?" is reported to be Metchinkoff's form of invitation to partake of alcoholic beverages. This great scientist is, as is well known, a profound student of the white blood cell and of its phagocytic power. The leucocyte normally eats up the microbe which would otherwise destroy the man. Metchinkoff has discovered that a rabbit, after taking alcoholic drink, cannot be made immune to anthrax; the leucocytes have evidently by this means been paralyzed.

The novelist's idea of a doctor is thus given by Julian Street in *McClure's:* "The doctor was not a real doctor; we bestowed the title upon him because of his professional air and his sagacity. We all agreed that the doctor knew nearly everything. He was familiar with the appendicitis operation and could find McBurney's point unaided; he knew the drama from its first inception to last night's productions; he had his own theories on yacht building, on socialism, and on the Great Beyond, and he had demonstrated most of them." Quite neat, this last observation; how had the doctor demonstrated his theory of the Great Beyond? By hastening anybody's advent there?

Puerperal infection of a peculiar sort is reported by Greene (*N. Y. Med. Jour.,* June 16, '06). The husband, who had an amateur interest in medicine, was in the habit of making almost daily vaginal examinations in order to note the course of the pregnancy. His business was the handling of hides. The labor was perfectly normal; but two days later the patient had a chill which was followed by a dreadful puerperal fever. She eventually recovered, but was quite blind of one eye and partially so in the other from an intercurrent attack of optic neuritis. Greene is convinced that the infection was by means of the germs which were conveyed from the filthy hides by the husband.

Caterpillar Fever is contracted by many in rural districts (*London Mail*). There is often an epidemic of "caterpillar rash," characterized by intense itching of the palms and sometimes of the face, with vesicles which, when they occur about the eyes, obstruct vision. Prophylaxis requires that caterpillars be left severely alone. The "palmar worm," for instance, the hairy caterpillar of the gold-tail moth, one of the commonest and most beautiful objects in the country at midsummer, passes from hand to hand. It leaves a few of its loosely attached hairs upon the palm; and an urticaria results, in the opinion of English rural physicians. Many other hairy caterpillars produce like effects.

An extemporized aspirator is described by the *Medical Review of Reviews.* A 5-pint bottle is fitted with a rubber cork, through which passes a glass tube to which is attached an aspirating needle. When wanted for use, ʒiii of alcohol are poured into the bottle, which is then tilted and rotated so that the fluid will wet its every portion; the excess is then poured out. The alcohol is then ignited and, as the flame reaches the bottom of the bottle, the cork is inserted and the tube is clamped with a pair of hæmostatic forceps. Thus is furnished sufficient vacuum to aspirate any safe amount of fluid. The entire cost of this efficient apparatus will not exceed half a dollar. It is in use in the New York Hospital.

That the sleeping sickness is easily contracted by Europeans is illustrated by the case of Lieut. Tulloch, of the Queen Alexander Military Hospital, who died recently while investigating the nature of the disease in Uganda, whither he had been sent by the Colonial Office as a member of the Commission which is seeking some means of cure or prevention. Lieut. Tulloch was not inoculated by the direct bite of the tsetse fly, but by having cut his hand with an infected knife. From the first he declared his case to be hopeless; indeed—probably from the very manner of the inoculation—it was without parallel with regard to he rapidity of its course. Lieut. Tulloch was the youngest son of Deputy Surgeon General John Tulloch, of the English Medical Staff, who died a few months ago, while his son was on his way home, invalided.

The therapeutic value of sarsaparilla was formerly held to be high; it was the favorite vehicle for the administration of the iodides in syphilis. Of recent years, however, sarsaparilla has fallen into disuse. However, several communications concerning the value of sarsaparilla as an alterative have recently appeared. Lemon gets excellent results by the use of Zittman's decoction, which contains sarsaparilla, fennel, anise, sassafras, mezereum, liquorice, and guaiac; this mixture is largely used in the continental resorts, against tertiary syphilides. Allbutt strongly recommends sarsaparilla in the treatment of syphilitic cachexia; he uses the syrup of sarsaparilla, which contains only the decoction with some white sugar, giving 4 ounces t. i. d. By this means several pounds a week were gained; whereas other cases which received iodide of potash and iron failed to gain nearly so much.

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SELECTIONS

Carbon-Dioxide gas retention as a frequent factor of disease. Dr. Louis Bradford Couch makes the following deductions in the Medical Record of July 14:

1. That uric acid is a product, not the cause of rheumatism.

2. That all varieties of rheumatism are caused by a carbon-dioxide, or rather, a carbonic-acid toxemia, due largely to fermentation of starchy substances in the stomach and bowels through improper insalivation and mastication of these substances and the pernicious use of liquids during and after meals which greatly dilute and weaken the ferments designed to digest such substances.

To-day I not only reiterate those statements, but declare furthermore that many of the diseases with which mankind is afflicted are primarily due to retention of the same poison in the system through failure of one or more of the excretary organs to perform their function of elimination. Disease germs, though impotent and powerless in conditions of perfect vitality, become active as roused lions when vitality is impaired. Lowered vitality or anemia comes first as an important etological factor to which human flesh is heir. From time immemorial man has recognized and dreaded the dangerous effects of suppressed respiration, but throughout the ages no one has ever recognized the toxic factor of perspiration which, when retained within the system, produces so much pain, suffering, and death. The author has after much study and experimentation found this potent factor of disease to be carbonic acid, the only poisonous constituent of perspiration.

Carbonic acid possesses the power of decomposing common salt, a fact not generally known, and this becomes a matter of vital importance as far as the maintenance of the integrity of the red blood corpuscles is concerned, as I shall show. That sodium chloride is an indispensable ingredient of the blood in the proportion of one-half of one per cent. is a fact no one will deny. Lower this proportion from any cause and you invite an immediate chemical disintegration of both red and white blood corpuscles. Inject pure spring water into a depleted circulation following a hemorrhage and the patient dies at once, not because the water is toxic but because it dilutes the blood and lowers the vitally necessary per cent. of common salt, thereby disintegrating both the red and white blood corpuscles. Inject under identical circumstances any reasonable amount of normal salt solution and the patient rapidly revives and soon recovers his usual strength. All the normal salts in the blood plasma, including the urates, are held in perfect solution and the kidneys possess no power of selection or rejection of any one of these saline constituents. The urine then is practically a saline mirror of the blood plasma. Uric acid has lately been shown to be a product of the destruction of white blood corpuscles through oxidation of their nuclein. Therefore, either diluting the blood with large quantities of aqueous liquids or lowering the proportion of sodium chloride in the blood in any other way, produces what I shall call a chemical anemia by disintegrating not only the red blood corpuscles, the oxygen carriers, but also the phagocytes, the proved destroyers of disease germs. Naturally we would expect under these circumstances that the uric acid in the urine would be increased.

It is a well-known fact that when human blood is deprived of nine-tenths of its oxygen the body dies, and I formulate an aphorism equally true that will stand the test of time: that when any tissue of the body is deprived of nine-tenths of its oxygen it dies or necroses also, since no tissue can be expected to possess a vitality or tenacity of life not enjoyed by the system as a whole. It is in this way and manner that ulcerations of every kind, all local necroses of tissues are produced by carbonic acid saturation of those tissues to the fatal point of oxygen exclusion; and disease germs or bacilli play little or no part in the phenomena.

Carbon dioxide gas resulting from starchy food fermentation and abnormally accumulating in the bowels causes gastric and enteric catarrh, the gases surrounding the fœces greatly distending the ascending colon above, as well as the appendix. The fœces we know normally are moved onward by vermicular motion and contraction of the intestines, but in cases of overdistention, the frictional hold upon the fœces is lost, the upper portion of the colon dilates, the fœcal mass falls, and pressing steadily against the ileocecal valve, causes ulceration, which is finally healed by granulation. This scar tissue cuts off from one-third to one-half of the normal

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XXXVII

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SELECTIONS

circulation of the appendix. A fresh attack of acute indigestion with fermentation and severe pain now ensues; inordinate dilation and saturation of the stomach, bowels, and the appendix also, by these poisonous gases results. The blood-vessels are pressed upon and their canals obliterated mechanically by the imprisoned gases, stasis results, oxygen is shut out, and as in cases of strangulated hernia the parts mortify, the dead tissues suppurate, rupture, and peritonitis and death follow as natural consequences. Oxygen starvation, and not disease germs, is indisputably the cause of this deplorable result.

This theory of mine is borne out by the uniform experience that fatal cases of typhoidal hemorrhage and intestinal perforation are always preceded and accompanied by great tympanites. The same gaseous distension also occurs in appendicitis before necrosis of the appendix, as every surgeon must bear witness.

Considering all these facts, I propose to treat pneumonia, pleuritis, pleurodynia, tuberculosis, mental and surgical shock, the so-called toxemic condition now known as uremia, acute and chronic nephritis, and puerperal convulsions by lessening cutaneous atmospheric pressure from fifteen to seven and a half or even five pounds pressure if need be, as follows:

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Carbonic acid also produces inflammation and destruction of the peridental membrane. The rough, sand paper condition of roots of teeth and what was formerly known as Riggs' disease—now pyorrhea—are really deposits of carbonate of lime, the carbonic acid forming chemical union with vegetable lime salts in the blood. These carobnates of lime are deposited in cartilaginous tissues everywhere. It is in this way that arteriosclerosis and calcareous degeneration of joints, cartilages, arteries, aorta, and cardiac vessels and valves are produced.

I am more than satisfied that carbonic acid toxemia will yet be found to be the main factor in the production of cancer of the breast, stomach, and of the intestines, of bronchial asthma, of heart failure in pneumonia, and of cellulitis, gangrene, etc.

The second annual course of lectures given by the Harvey Society, of New York, will be opened on October 20, 1906, by Prof. A. E. Wright, of London. Ten lectures are to be given during the year, the lecturers and dates being as follows:

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Nov. 3.....	"	C. A. Herter.
Nov. 17.....	"	W. T. Porter.
Dec 1.....	"	J. G. Adami.
Dec. 15	"	George Huntington.
Jan. 12.....	"	F. G. Benedict.
Jan. 26.....	"	E. B. Wilson.
Feb. 9	"	S. J. Meltzer.
Feb. 23.....	"	W. T. Councilman.
Mar. 9.....	"	Friedrich Müller.

The officers of the society for the coming year are Graham Lusk, president; Simon Flexner, vice president; F S. Lee, treasurer; George B. Wallace, secretary; and C. A. Herter, S. J. Meltzer and James Ewing, council.

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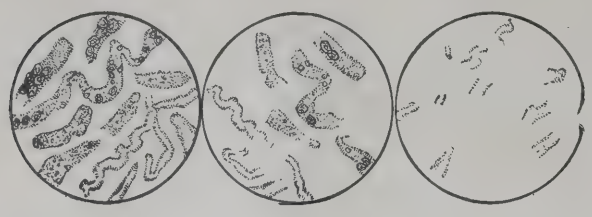

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SELECTIONS

Farming as a Profession. Probably no man in the country is so well qualified to discuss authoritatively the attitude of young men to-day toward farming as a profession as L H. Bailey, Director of Cornell University Agricultural College. Professor Bailey's presentation in the July Century of the reasons many intelligent men urge against farming as a life work has excited wide discussion. In the August Century he will give the reasons which are leading young Americans to-day to follow farming. He has summarized for this second article the replies sent him by sixty-eight city-bred or town-bred students of Cornell University who intend to pursue farming—farming considered in its broad sense—as a business. The replies considered by Professor Bailey in the forthcoming article are marked, he says, by the prominence given to ideals and by the subordination of mere personal emolument and desire for money. This authoritative presentation of facts, especially in connection with Professor Bailey's discussion of "Why Do the Boys Leave the Farm," cannot fail to be of great suggestive interest and value.

The Drainage Canal and Chicago's Health. Chicago's $50,000,000 drainage canal is again receiving attention from those who fear for the level of the Great Lakes.—"Charities." The movement for the preservation of Niagara Falls is enlisting and should continue to enlist the active support of the whole country. The public's sense of fair play, however, will see the justice of giving the right of way, so far as abstracting waters from the Great Lake system is concerned, to the great enterprise of the people of Chicago, instead of to any organization whatsoever of private capital designed to take water at the falls for purely commercial purposes. If any curtailment of water rights is to be made, the health of a great city should be considered ahead of the profit of electrical companies, even though their power is to be used for public service.

Examination to determine the possible presence of cardiac disease or aneurism should always be made before passing a stomach tube. In the presence of such lesions the tube should not be employed except as a life-saving measure in an emergency.—*Am. Jour. Surg.*

Ox-Bile in Cultivating Typhoid Germs. Heinrich Kayser, of the Institut f. Hygiene u. Bakteriologie der Kaiser-Wilhelms-Universität, Strassburg, has described in detail a method which is destined to play an important part in the early diagnosis of typhoid fever. Numerous previous experiments have shown that bile is an ideal culture medium for typhoid fever. Most of the relapses occurring in the disease are explained by the fact that the germs have wandered into the biliary system from the intestines and have here found a most favorable medium for their cultivation. Many cases of gallstones can be directly traced to a previous typhoid, and the bacilli have even been demonstrated in the interior of the stones. The bile, ready for use, has recently been placed on the market.—*Muench. med. Woch.*, 1906, No. 17.

Treatment of Abortion. H. J. Boldt, of New York, considers the induction of an abortion justifiable in pernicious hyperemesis, in some cases of chorea, in certain forms of convulsive seizures, nephritis preceding or manifesting itself early in pregnancy, and in certain cases of contracted pelvis. If the well-known bougie method does not bring about the desired result in from twenty-four to forty-eight hours it may be supplanted with a tampon of gauze carried into the uterine interior. The treatment for abortion he considers under four heads: (1) Imminent abortion may be prevented by absolute rest in bed and the use of drugs like codeine and viburnum prunifolium; (2) progressing abortion, and (3) incomplete abortion may be assisted to a spontaneous termination by a hot vaginal antiseptic douche and vaginal gauze packing. An oxytocic should be administered internally. In patients in whom the uterus was not markedly enlarged and the cervix firmly contracted, the author saw the most marked benefit from the administration of stypticin in 3-grn. doses, given in capsules at intervals of three hours. The powder should be ordered to be put in a dry form into the capsules. Should the bleeding not cease from the administration of one of the remedies mentioned, curetting is indicated, with subsequent irrigation with a 1 per cent. carbolic acid solution.—*Jour. A. M. A.*, March 17, 1906.

If a patient dates irregular or persistent cough from a time when he thinks he "swallowed" or inspired a foreign body, the fact that the physical signs elicited upon examination of the chest are peculiar—different from those found in ordinary types of bronchitis—points strongly to the presence of a foreign body.—*Am. Jour. Surg.*

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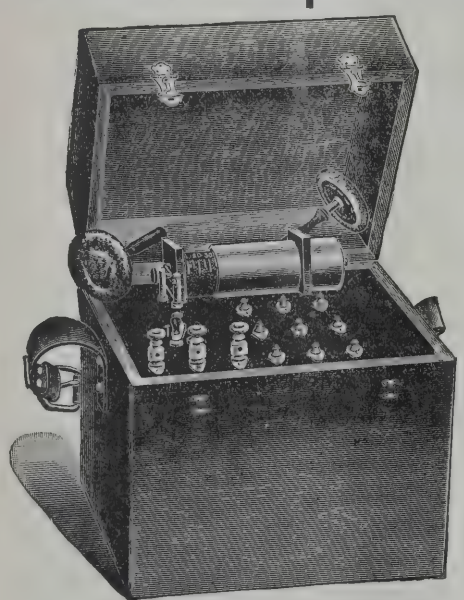

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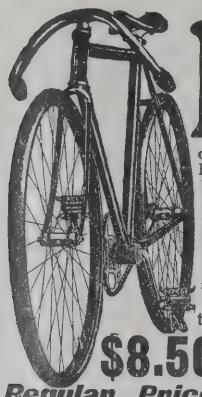

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SELECTIONS

Fever in Appendicitis. In uncomplicated appendicitis the temperature seldom runs above 100 or 101° F.; hence "fever medicine" is not often required. Whenever the temperature goes above 102° F. a small dose of acetanilid will cause it to drop to about normal for some hours and relieves the pain and nervousness; one-half gram (7½ grains) may be given in one dose, if there is no decided weakness of the heart. Aconitine may be given, if preferred, until the temperature and pulse drop to the required degree.

Metabolism in pancreatic disease and the effects of opium and pancreatic extract. It is well known that the pancreatic gland elaborates ferments that chemically alter proteids, fat, and starches, and thus prepare them for assimilation, and that it also produces an internal secretion that is of the greatest importance for the normal combustion of sugar within the tissues. If the pancreas is removed experimentally, diabetes mellitus will follow and the food will be improperly digested, but if the excretory ducts only are ligated, glycosuria is not the rule. On the other hand, an experimental diabetes can often be corrected if a small piece of pancreas be implanted under the skin, so that the organism gets the benefits of the internal secretion. If the pancreas is destroyed in man by pathological processes (tumor, infarct, atrophy), the results are the same: fats, starches, and carbohydrates will be poorly digested and the symptoms of diabetes will appear.

A case of carcinoma of the pancreas, presenting all the typical symptoms, was selected by Ernst Meyer, of the Universitats—Klinik, in Halle a S., in order to determine experimentally the absorption of the different food products and to ascertain if the disturbances in the metabolism and the excretion of sugar can be favorably influenced by internal medication, particularly by opium, since this undoubtedly reduces glycosuria, and by pankreon, a most effective tannin-pancreatin compound. The amount of food required by the patient was above normal and the quantity of fœces voided was still larger. On a diet of meat, eggs, milk, rolls, and potatoes, an analysis of the fœces showed that only 34 to 38 per cent. proteids and 23 per cent. fat were absorbed, while on a diet of only milk, rolls, and butter, 41 per cent. of proteids and 38 per cent. of fat were assimilated. Neither starch nor sugar could be detected in the fœces, but by way of the urine, on the average, 90 Gm. of glucose were lost daily. Pankreon was now administered in three daily doses of 1 Gm. (15 grn.) for six succeeding days. The amount of proteid absorbed now reached 59 to 64 per cent.; that of fat 63 to 66 per cent., while only 34 Gm. of glucose were excreted daily with the urine, so that the patient was again in nitrogenous equilibrium. The number of calorics utilized rose from 1700 to 2500, the stools lost their disagreeable odor and became more solid, and the general condition of the incurable patient was much improved. With opium (15 drops tinct. opii simpl. t. i. d.), 47 to 52 per cent. of the ingested proteids and 45 to 49 per cent. of the ingested fat were absorbed, and the amount of sugar excreted was also reduced, proving that opium has very much the same effect in pancreatic disease as pankreon, but to a less degree. It is probable that still better results will be obtained if both drugs are used together.—*Zeitsch. f. experiment. Path u. Therap.*, 1906, iii, No. 1.

Treatment of Cancer and other Tumors. Dr. G. Bettin Massay, one of the attending surgeons to the American Oncologic Hospital, Philadelphia, reports the following conclusions:

(1) The question of the best method of treatment for operable cancerous growths is far more important than that of the inoperable, for the only real progress will be made in the early treatment of these growths. (2) Results already attained in the Oncologic Hospital indicate, in the opinion of the writer, that over two-thirds of early cases of malignant disease are best treated by the cataphoric operation. (3) The knife is most useful when an entire organ in which an incipient growth has appeared may be removed, and least useful when the limits of the growth are difficult of determination. (4) Roentgen rays are indicated in the early treatment of cancer when a superficial growth is too extensive for destruction by cataphoresis. Small superficial growths should not be subjected to this slow and uncertain method alone when they may be destroyed in a few minutes by cataphoresis.

A slender fish bone lodged in a bronchus will usually not cast a shadow on the x-ray plate. In such a case bronchoscopy and auscultation are more reliable diagnostic measures. In addition to a variety of moist râles, one may hear, associated with the inspiratory or expiratory murmur, or both, a musical or vibratory note, when a bone or pin lies in a bronchus.—*Am. Jour. Surg.*

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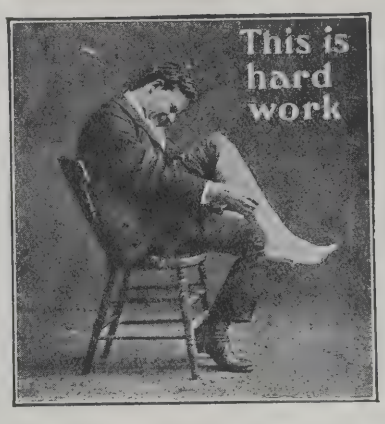

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SELECTIONS

In all cases of torticollis (*Am. Jour. Surg.*), examine for caries of the spine.

A mass in the right iliac region (*Am. Jour. Surg.*), associated with a pulmonary lesion, is very suggestive of ileocecal tuberculosis.

In ingrowing toenail, evulsion of the nail gives temporary relief, but it does not cure. When the nail grows out again the condition recurs, often in aggravated form.—*Am. Jour. Surg.*

Fracture of the outer end of the clavicle may follow a fall upon the shoulder. Unless one makes a careful examination such a fracture may escape observation or be mistaken for a dislocation of the outer end of the clavicle, with which condition, indeed, it may be associated.—*Am. Jour. Surg.*

Shortening of the shoulder, as measured from the sternal end of the clavicle to the acromion process, is significant of fracture of the clavicle.—*Am. Jour. Surg.*

Furunculosis vulvæ, even when it persists in spite of all other treatment, will usually yield to daily scrubbing with green soap and the application of a dressing of sublimate solution.—*Am. Jour. Surg.*

Cystic swellings, at the external angle of the eye, are usually dermoids. In some cases they communicate by a small opening with an intracranial sac.—*Am. Jour. Surg.*

Non-malignant tumors of the parotid practically never cause pressure effects on the facial nerve. This may be of importance in differentiating them from malignant tumors.—*Am. Jour. Surg.*

In cases of run-over by vehicles, if the wheels pass over the trunk from right to left the liver is the organ most commonly ruptured, whereas, if the wheels pass from left to right the spleen is more frequently injured.—*Am. Jour. Surg.*

In all cases of lumbago, especially of the chronic variety, examine the sacro-iliac joints for tenderness. Such cases may sometimes be almost instantaneously relieved by applying broad strips of plaster from beyond one superior iliac spine to the other, across the back. The straps must be applied tightly and with the feet close together.—*Am. Jour. Surg.*

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The most notable announcement is the new work on Surgery, edited by Dr. W. W. Keen, complete in five octavo volumes, and containing over 1,500 original illustrations. The entire work is written by the leaders of modern surgery—men whose names are inseparably associated with the subjects upon which they have written. Without question, Keen's Surgery will represent the best surgical practice of to-day.

In children, suspected of having a foreign body in the larynz, it will be generally found necessary to anesthetize the patient before a satisfactory laryngoscopic examination can be made, although in the presence of severe dyspnea no time should be lost in performing tracheotomy.—*Int. Jour. of Surg.*

Suppression of urine in infants is extremely rare, and in any case in which the child is unable to pass its urine it is far more likely that there is some congenital source of obstruction. The existence of this should be determined by the prompt introduction of a soft rubber catheter.—*Int. Jour. of Surg.*

In cases of spina bifida, in which the mass is small and the overlying skin not much atrophied, the protruding part may be reduced into the vertebral canal and prevented from returning by a disc of pasteboard, cork, or celluloid, held in position by adhesive plaster and bandage.—*Int. Jour. of Surg.*

The administration of thyroid extracts or iodides and the application of iodine ointments are only of value in recent cases of soft or parenchymatous goitres, especially in young persons.—*Int. Jour. of Surg.*

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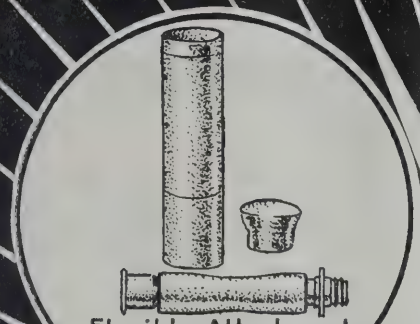

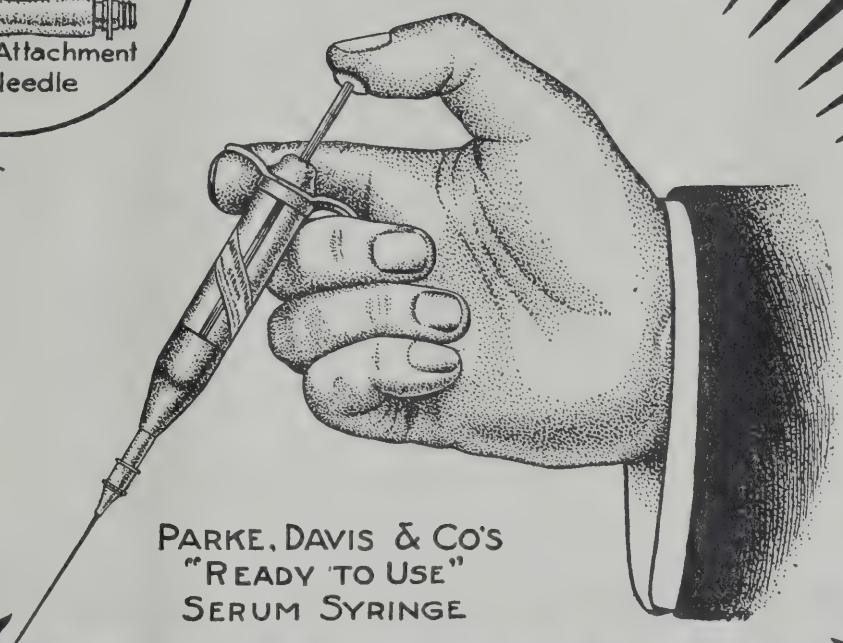

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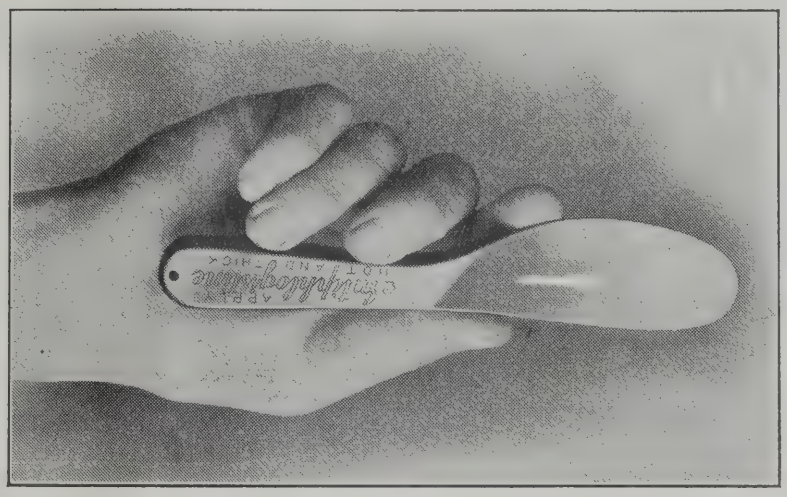

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Digitalis—Physiological Standardization.—Since the discovery of digitoxin, which is regarded as the active constituent of digitalis leaves, numerous endeavors have been made to standardize digitalis preparations on the basis of their digitoxin content. H. F. Moschkowitsch, referring to this (Arch. de Pharm., No. 5) remarks that more recent experiments have been directed to the determination of the digitoxin by physiological methods. This, in nearly all cases, depended on the susceptibility of the heart of the frog to the action of this constituent of digitalis, and the belief that by this means a direct quantitive estimation of digitoxin in different preparations could be effected. The author gives an account of the experiments undertaken with the object of ascertaining the availability of such a method, depending upon the greater or less rapidity in which the systolis of the heart of frogs is affected by digitoxin and by preparations which he made himself. As a result of his experiments, the author is of the opinion that standardizing digitalis preparations by the physiological method is not sufficient.

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Dr. K. Hochheim subjected Digalen to a series of tests in the hospital of Magdeburg-Sudenburg, extending over a period of seven months—from November, 1904, to May, 1905. At the conclusion of a voluminous report, Dr. Hochheim makes these statements: "Digalen has proved to be a serviceable cardiac tonic. It increases the blood pressure and in arrhythmia it exerts a regulating influence on the action of the heart; it does away with, or considerably diminishes, at least, the number of extra systoles. . . . By resorting to intravenous injections of Digalen, local phenomena of irritation may, as has been ascertained by Kottmann, be entirely avoided."

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Dr. Jos. Holt, *of New Orleans, Ex-President of the State Board of Health of Louisiana,* says: "I have prescribed BUFFALO LITHIA WATER in affections of the Kidneys and urinary passages, particularly in Gouty subjects in Albuminuria, and in irritable condition of the Bladder and Urethra in females. The results satisfy me of its extraordinary value in a large class of cases usually most difficult to treat."

Dr. Alexander B. Mott, *New York, Professor of Surgery, Bellevue Hospital Medical College, Surgeon Bellevue Hospital:* "I have made sufficient use of BUFFALO LITHIA WATER to be satisfied that it possesses very valuable therapeutic properties. In the Gouty Diathesis, Chronic Inflammation of the Bladder, and other diseases affecting the Urinary Organs it may be relied on to give the most satisfactory results."

Dr. Lewis Bosher, *Richmond, Va., Professor of Surgery, Medical College of Virginia:* "I have frequently used BUFFALO LITHIA WATER with the most satisfactory results in all conditions where an active diuretic is indicated, and have found it especially serviceable in Rheumatic and Gouty conditions, Albuminuria of Pregnancy, Catarrh of the Bladder, and other diseases affecting the urinary organs."

Dr. Robert Battey, *of Rome, Ga., Suggestor of Battey's Operation,* writes: "I have been using BUFFALO LITHIA WATER in my practice three years past, in cases of Chronic Inflammation of the Bladder, whether induced by stone, by enlarged prostate in the aged, or by neglected Gonorrhoea, and have secured excellent results, which encourage me to prescribe it for the future."

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Dr. Alfred L. Loomis, *Professor of Pathology and Practical Medicine in the Medical Department of the University of New York,* wrote: "For the past four years I have used BUFFALO LITHIA WATER in the treatment of Chronic Bright's Disease occurring in Gouty and Rheumatic subjects, with marked benefit."

Dr. J. Page Massie, B.A., *Professor of Obstetrics in the Medical College of Virginia, Richmond, Va.:* "I have used quite extensively and with excellent results, BUFFALO LITHIA WATER in the Albuminuria of Pregnancy and in all other conditions incident to pregnancy, in which the Kidneys fail to do their duty in eliminating the products of metabolism. A liberal use of the water will prevent the accumulation of urea and other poisonous products in the system, and in this way uræmia and puerperal convulsions can be avoided."

Dr. George Ben Johnston, *Richmond, Va., Ex President Southern Surgical and Gynecological Association, Ex-President Medical Society of Virginia, and Professor of Gynecology and Abdominal Surgery, Medical College of the University of Virginia:* "It is an agent of great value in the treatment of the Albuminuria of Pregnancy."

Dr. J. Allison Hodges, *Richmond, Va., President University College of Medicine, and Professor of Nervous and Mental Diseases:* "In Albuminuria of Pregnancy, this water is one of the very best alkaline diuretics, and, with milk diet, is one of my sheet anchors."

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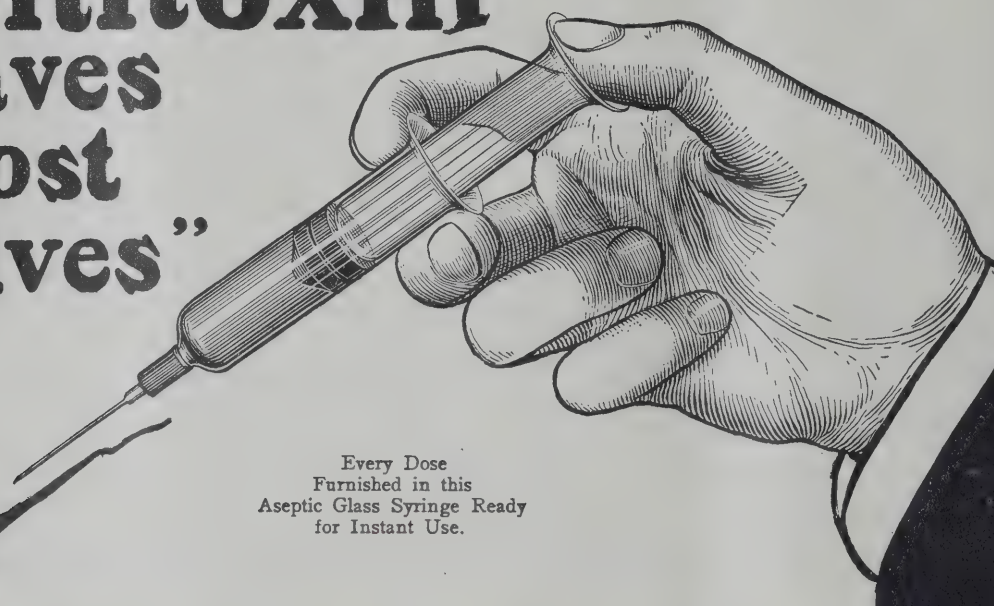

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SELECTIONS

In Schwalbe's Jahrbuch der Praktischen Medicin, 1905, Professor M. Cloetta, of Leipzig, reviews the reports that have been published on exodin, and expresses his opinion of the remedy in the following terms: "It is a fact that the use of exodin is not attended by symptoms of irritation; the passages follow without disturbances of any kind, and are in the nature of normal evacuations." Dr. Th. A. Maass, assistant at the Pharmacological Institute of Berlin University, writes in a paper on "The New Purgatives": "In the same group as emodin is exodin, a mixture of rufigallic acid derivatives. This remedy has undergone the most varied tests, especially a very thorough investigation at the hands of Professor Ebstein. The latter was very well satisfied with its action, both alone and when there was impaction in the lower bowel, in combination with oil enemata. On doses of ½ gram for children and 1 gram for adults, the remedy usually acts after eight to twelve hours, which is, of course, exceedingly pleasant for the patient, who can take it on retiring and has the desired effect on rising in the morning."—Abstracted from "Berl. klin. Wochenschrift," April 12, 1906.

Higher Education for Farmers. Following Professor L. H. Bailey's discussions of why boys leave the farm and why some boys take to farming—vital questions to-day—the September "Century" will present another paper from the Director of the College of Agriculture of Cornell University. Professor Bailey's discussion of "The Agricultural College and the Farm-youth" is based, as his former papers have been, on facts and figures gathered at first hand from Cornell University students. Naturally, Professor Bailey pleads for higher education for the farm-youth; and his arguments are certain to be worthy of thoughtful consideration.

After operation for empyema (Am. Jour. of Surg.), a cover of oiled silk or gutta-percha over the gauze dressing serves to prevent admission of air into the pleural cavity, while it will not interfere with the escape of air already in the chest. Indeed, a flap of rubber may be laid over the wound and fastened, with a little chloroform above. This allows pus to escape from beneath it and excludes the admission of air.

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SELECTIONS

Foreign journals state (Science) that the Australian government has issued a proclamation prohibiting the importation of the microbe of hæmorrhagic septicæmia, by which it was proposed to destroy the rabbit pest, except upon the condition that the packages containing the microbes be handed unopened to the state bacteriologist of New South Wales, and retained by him unsued until the minister gives permission to use them. Under the Noxious Microbes Act of 1900 of New South Wales it will also be necessary for the state government to pass a regulation sanctioning experiments before anything can be done in the way of rabbit extermination. In the meantime only laboratory experiments will be carried on.

Cheaper Liquid Air.—According to a consular report (Science) recent experiments in England of an invention by Mr. Knudsen, a Dane, furnished liquid air at one-sixth of the present market price, and give promise of an ultimate low price of a fraction over two cents per gallon. The result is secured by purely mechanical means, without an atom of added chemicals. Atmospheric air is first purified and then compressed by stages to 2,500 pounds to the square inch. It is finally reduced to 125 pounds to the square inch, which then cools and liquefies the high-pressure air. The oxygen gas produced by separating the nitrogen from the liquid air is claimed to be purer than that of the old method, and can be supplied in the liquid as well as in the gaseous form. One gallon of liquid air equals approximately 128 cubic feet of oxygen gas, which retails at six cents per cubic foot. The new price is one cent. Liquid air has been successfully used in coal as an explosive, being quite safe where fire damp and other explosive gases exist. Liquid oxygen is also used for welding steel pipes, boiler shells and plates for shipbuilding instead of riveting. That oxygen and nitrogen can be separated from liquid air and sold retail at $1.20 per gallon shows great commercial possibilities. The use of nitrogen for agricultural purposes opens yet another field. The maturing of liquors will be helped by liquid air, as also the preservation and purification of milk. As a motive power its use is considered to be quite practicable for small powers. The British government is already carrying out a number of experiments with a view to the utilization of liquid air for various purposes.

The Children's Laxative.—In his perplexity of choosing just the laxative or purgative he wants for a child, particularly for an infant, the physician will find that Cascarenna affords a most satisfactory solution of the question. Cascarenna has several commendable properties that other laxative compounds do not possess. It is agreeable to children, being sweet and pleasantly flavored. There is no difficulty in getting them to take it, a point that mothers and nurses appreciate thoroughly. It is a happy combination of well-tried laxatives and gentle purgatives; hence it is not an experiment to prescribe Cascarenna for the first time. It does not gripe or derange the digestive system; and owing to the presence of cascara sagrada it has a tonic laxative action that imparts to it double value in the treatment of the constipation of infancy and childhood. Fnally, Cascarenna is a thoroughly efficient and reliable therapeutic agent, from which the practitioner may confidently expect only the most satisfactory results. Each fluid ounce of Cascarenna contains:

Cascara sagrada	40 grs.
Senna	120 grs.
Potassium and sodium tartrate	24 grs.
Chenopodium	8 grs.
Pumpkin seed	8 grs.
Sodium bicarbonate	4 grs.

Agreeably flavored with aromatics.

The dose for a very young infant is 5 to 10 drops; a child one year old may take 10 to 20 drops; older children 20 drops to one teaspoonful, according to circumstances. Cascarenna is prepared by the well-known house of Parke, Davis & Co., which is a guarantee of its reliability.

A swelling or redness behind the scrotum (Am. Jour. of Surg.), in cases of urthral stricture or developing after urethral instrumentation, usually means urinary extravasation, which requires prompt and active treatment.

If difficulty is experienced (Am. Jour. of Surg.) in reducing a paraphimosis because of swelling, before dividing the constriction apply a rubber bandage around the parts for a few minutes; this may relieve the swelling to such an extent that the paraphimosis can be easily reduced.

In fractures of the base of the skull (Am. Jour. of Surg.), with bleeding from the ear, it is important to take especial pains to prevent ear infection.

SELECTIONS

Treatment of Dupuytren's Contraction. The causes of Dupuytren's contraction of the hand are not well understood, but it is probable that some cases are due to mechanical causes, while others must be explained on a nervous basis. Johann Plesch publishes two typical cases which were treated with injections of fibrolysin (2.3 c. c.) every second day. In addition, the patients bathed their hands in hot salt water every day and received massage and active manipulation of the fingers. One patient was cured after ten injections, the second was only improved after fifteen. In the first case, the cause was a purely mechanical one, while the less brilliant results in the second case are probably due to the fact that the contraction was secondary to trophic disturbances in the nerves. The chief disadvantages of the surgical treatment are the time required for the radical removal of the fascia and the frequent recurrence of the trouble. A reliable internal remedy must, therefore, be very welcome in the mechanical cases. It is always best to inject as close as possible to the contracted tissues. Bad after-effects, either local or general, were not observed. Mechanical methods should always be employed to hasten the cure.—"Wien. klin.-therap. Woch.," April 15, 1906.

Treatment of Insanity in General Hospitals. D. R. Brower, of Chicago ("Journal A. M. A.," July 14), for thirty years has been treating selected cases of insanity in the wards of general hospitals, with success sufficient to justify him in urging this plan on the profession generally. The method used is substantially that known as the Wier Mitchell rest cure, and the cases specially amenable to this treatment are the autoxic and exhaustional ones. For the progressively degenerative types the only proper place is the special hospital for the insane. The rest cure should be followed by judicious exercise, congenial occupation, etc. Insomnia is usually a troublesome symptom, and its judicious relief is often a most perplexing problem. All of the sleep-producing remedies are double-edged swords; they cut both ways. In promoting sleep they may derange the general nutrition, and the remedy that seems to be well suited to one case may be absolutely of no avail in another. As one of the characteristics of all of these cases is exhaustion, the hypnotics that are much depressing should be avoided. The following prescription will produce sleep in many cases without cardiac depression:

Vernol ..... 40 grs.
Codien. phosphatis ..... 4 grs.
M. ft. in pulveres No. viii.
One at bedtime.

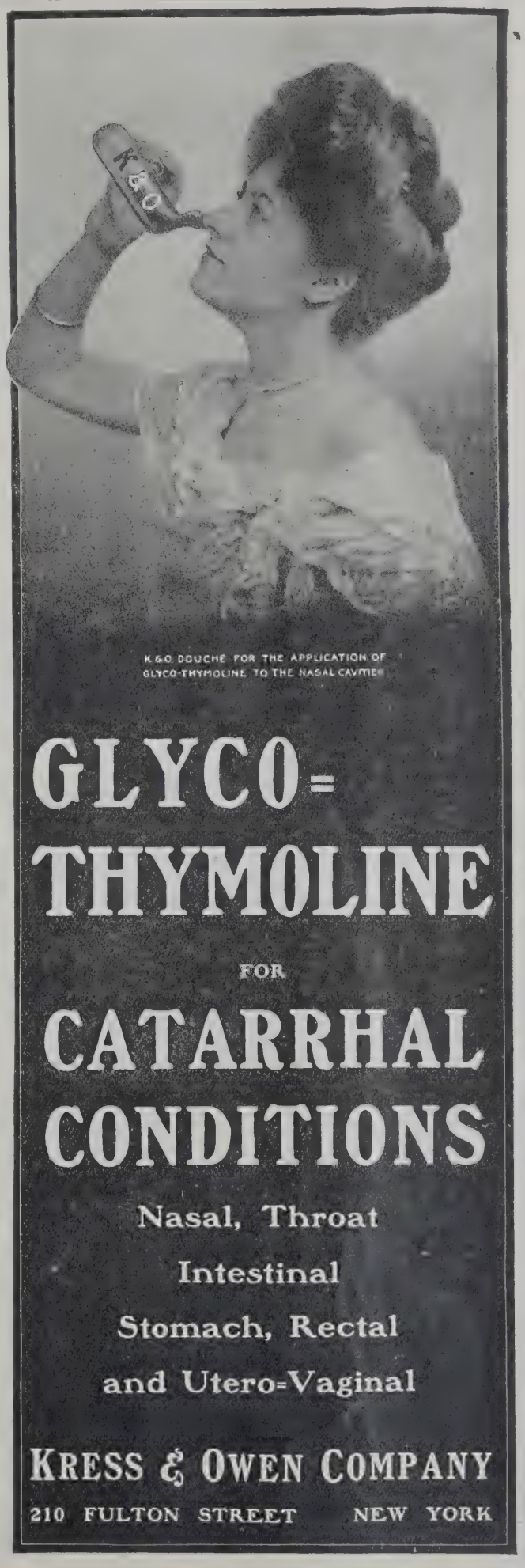
Hyoscine hydrobromate will produce the same result in other persons, and not infrequently the three drugs may be combined in the same prescription with great advantage. In the depressive cases the deodorized tincture of opium or the aqueous extract given in repeated doses during the day will secure sleep at night and also relieve the intense psychic pain from which they suffer. When these remedies fail to relieve insomnia, the author's preference is for chloralamid or trional, and only with great reluctancy does he use chloral. Anemia when present will yield promptly to the free use of Blaud's pills, freshly prepared. The profound error in metabolism that is a part of the pathogenesis of insanity is sometimes overdone by alteratives, and the best method with which to accomplish this purpose is the use of chloride of gold and sodium combined with the resin of guaiac, as in the following prescription:

Aurii et sodii chloridi ..... iss gr.
Pulv. res. guaiaci ..... iss dr.
M. et div. in caps. No. xxx (dry).
One before each meal.

The new edition of Morris' "Anatomy," soon to issue from the press of P. Blakiston's Son & Co., will contain two features which, aside from other considerations, must appeal particularly to all teachers and students of the subjects who desire a text-book embodying the best modern thought, methods of study and results of recent investigation. There are, first, the fact that seven of the best-known American anatomists have been prevailed upon to write, rewrite and revise various sections. Second, the adoption of the new (B. N. A.) nomelclature.

In severe falls or blows or fractures of the pelvis (Am. Jour. of Surg.), catheterize the patient as soon after the injury as possible in order to discover a possible rupture of the bladder.

In cases of fracture of a rib (Am. Jour. of Surg.) it is necessary to watch the patient carefully for a couple of days to note the onset of a possible lung complication. Localized pneumonitis sometimes occurs.



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THE SEX CYCLE OF THE GERM PLASM.

Its Relation to Sex Determination.

BY THOMAS E. REED, M.D.

PART II.

DARWIN says in respect to the bearing natural selection may be considered to have on this question: "Suppose the case of a species, which from unknown causes produces an excess of one sex, say males—an excess of males being superfluous and useless. By natural selection could the sexes be equalized? We may feel sure from the fact that characteristics being variable certain pairs would produce a somewhat less excess of males over females than would other pairs. The former supposing the actual number of offspring to remain constant would necessarily produce more females and would therefore be more productive. On the doctrine of chances the greater number of the offspring of the more productive would survive and these would inherit a tendency to procreate fewer males and more females. Thus a tendency toward equalization would be brought about." He apparently does not advance this hypothesis very confidently, and later he evidently felt it would require considerable modification, for he says: "I formerly thought that when the tendency to produce both sexes in equal numbers was advantageous to a species it would follow from natural selection, but I now see that the whole problem is so intricate that it is best to leave its solution to the future."*

Before reviewing Starkweather's hypothesis, which will be discussed in greater detail, attention will be called to a sex theory which a few years ago attracted considerable notice. The late Prof. Schenck held that in order to produce male offspring it is necessary to alter the diet of the mother previous to conception, selecting nitrogenous substances and excluding carbohydrates. The urine should be examined for sugar by a series of very delicate tests. When all sugar has disappeared impregnation should be allowed, but the diet should be continued for about eight weeks afterward, when, he says, it may be gradually altered. If a boy is desired the urine must be entirely freed from even the slightest trace of sugar before conception. He says: "The condition of a woman in a well regulated married state, when, as we will suppose, five or six girls are born, must be supposed to be of the kind that departs more or less from the normal." He also remarks that no influence can be exerted if female offspring are desired. On reading Prof. Schenck's book it immediately occurs to one that if these contentions are true a woman afflicted with diabetes mellitus, in which disease varying amounts of sugar are constantly being excreted, would necessarily always give birth to girls. This is not found to be the case. The author, however, anticipating this objection, advances this rather unsatisfactory explanation; he says: "Notwithstanding the high percentage of sugar excreted in the case of a woman suffering from diabetes, female offspring do not necessarily appear, because in the slighter cases of this disease the normal metabolism can be considerably improved." Without depreciating in the slightest the patient investigation evidently given by Dr. Schenck to this subject, we feel that this method considered merely as a hypothesis is about the least plausible of any of those we have met with. On the other hand we do not believe that the clinical evidence he presents is extended enough to justify his conclusions.

Dr. Napheys held, with M. Thury, whose name is most prominently connected with this view, that the time of conception with respect to the menstrual month is an important factor in the determination of sex. He states that the queen bee lays female eggs first, hens are also said to do this, although Albini's extensive experiments with poultry would hardly seem to justify this conclusion.* The method was also supported by the authority of Düsing. Some stockbreeders claim to have had considerable success in following this rule. Breeding mares late in heat when male colts are desired. Schroder has investigated this; however, and affirms that he has never been able to confirm M. Thury's theory with the human subject.

The following somewhat hazy hypothesis has lately been advanced by a French writer on the subject.† What is intelligible in the theory seems to partake largely of Starkweather.

He believes the ova and spermatozoa express the extremes of fine cellular differences. They typify in themselves the psychological and somatic differences between the adult male and female organism. He also holds that there is an antithesis between the germ cell born by an individual and that individual. In brief the spermatozoa are essentially female, and ova male, thus each adult organism typifies the primitive hermaphroditic unity of sex, which he postulates. This being true, he believes that if a relatively feeble ovum be fertilized by a vigorous spermatozoön the qualities of the spermatozoön will be dominent, the offspring resembling the father, but of the female sex. Sons are the result of vigorous ova fertilized by feeble spermatozoa. He holds that the somatic cells must balance the sex cells and therefore they will be female and the offspring will be male but resembling the mother.

This résumé of a few of the principle sex theories will be concluded with a brief consideration of the Starkweather hypothesis, which is perhaps one of the most plausible of the many theories that have been advanced.*

The law which he believes he has discovered he briefly sums up in the following words: "Sex is determined by what I shall designate as the superior parent, also the superior parent produces the opposite sex."

While there may be much difference between two individuals of the opposite sex, he holds that sexes are equal in the aggregate, male equaling female, as true physiological equivalents. He further says that, with reference to individuals, "superiority" means "anything which tends to increase functional energy in any part of the system," and that "the superior germ rules, as superiority is sure to do wherever it be placed, and outbalancing the other, turns the scale of sex, but subject to the unvarying law of opposites which we conceive to be the principle of universal equilibrium, produces its opposite, hence if the mother be more highly endowed, or even but temporarily more favorably conditioned than the father, the offspring will be of the male sex and endowed with more of the mother than the father. The converse of this will of course obtain,

* "Descent of Man," Chapter VIII.

* *Centralblatt fuer Medicinische Wissenschaft,* 1868.

† "Qu' est-ce Qui Determine Le Sexe?" A Van Luit. Paris: 1902. Bailliere et Fils.

*"The Law of Sex," George B. Starkweather, London, 1883.

and a superior father on the same principle will beget a daughter. The theory may appropriately be designated that of 'superior opposites.'"

It will be readily seen that this hypothesis accounts remarkably well for the general equality in numbers between the sexes. A superior father, young, and the chances for life good, produces daughters, but as he grows older, passing the prime of life, and his wife, whom we will assume is some years younger than he, as is often the case, approaches her prime, she rather than he stamps the sex of the children, producing sons. Anything which might throw one sex of a species below par and thus threaten a disturbance of the balance is compensated for by the consequent ability of the superior parents to stamp the future offspring with the opposite sex. Leaving all secondary sexual characters out of consideration it will be conceded that the male or female of a mated pair run equal chances of possessing those qualities which confer superiority.

Starkweather further says: "That there exists a law of equilbrium in regard to sex as in all of nature's operations is a fact upon which I have insisted. . . . It is no mere assumption that there is a self-adjusting principle connected with sex, for it is a fact as visible as it is indispensible and immutable. Its workings are to be seen on every hand as easily as the vivifying effects of the sun's rays upon the face of nature. It must be so or the sexes would not show the invariable tendency toward equilibrium throughout the world as they now do." After a discussion of numerous sex theories he says that he soon learned to test the truth of any of these theories by ascertaining whether or not they contained any principle of balance. It will not be necessary to follow Starkweather through the detailed enumeration he makes of the qualities he considers superior and inferior. He lays stress on cerebral development, nervous energy, will, temperament, physical development, and nutrition; intelligence, facial features, etc.

The first objection to be urged against this theory is the one already stated as applying to many others; that is, so many of the factors are relatively very indefinite. Hence there would always be room for considerable difference of opinion as to what would constitute superiority in any particular instance. In man we should be able to recognize superiority and inferiority more easily than in any other animal, because we are more familiar with the factors involved, but when we take any particular mated pair we find that in a great majority of instances any factor denoting superiority, for instance in the male is offset by one denoting inferiority; or superior traits in the female are met or contrabalanced by other superior traits in the male. Had the originator of this theory taken one or two factors and been content to rest his hypothesis on these, there would not have been so much room for a difference of opinion, but he evidently found early in his inquiry that no limited number would prove sufficient; he was therefore obliged to greatly enlarge his list of determinants running the whole scale from the lowest physical to the highest intellectual qualities. Now a state of things is reached which renders it easy for any upholder of his theory to find in any particular case plenty of evidence for it, but there is also the opportunity for any one so inclined to dispute almost every argument adduced.

The second objection to this hypothesis is one based on simple observation. Almost every one can note among their acquaintances families where girls or boys alone have been the rule. Then perhaps a child of the opposite sex makes its appearance without any obvious change of superiority between the father and mother. There might be room for a difference of opinion as to which of the two parents was originally the superior, but there cannot be any room for difference of opinion as to the fact that there has been to all appearances no superiority alternation.

Starkweather holds that his theory will apply to the whole animal kingdom as well as to man. Here he must encounter another objection, for in many species one sex is immensely and constantly superior to the other. In the course of a few years a stallion may be bred to a great number of mares. He is in all probability a superior animal to every one of these. He is in fact selected as a sire because of his superiority in every respect to the ordinary run of horses, yet the sex of the offspring varies. Many other examples of this might be cited, as in the *Arachnoideans* where the females are often very superior and with the *Bonellia viridis* there is a great difference in size, the female being markedly the superior.*

Starkweather gives numerous rules for the acquirement of superiority by one parent for the purpose of determining the sex of a child yet to be conceived. Now the whole trend of modern thought on this subject of heredity goes to show that the germ plasma if not entirely uninfluenced by any acquired characteristics in the parent organisms is but very slightly so. All these methods, recommended as favoring the determination of sex in the germ cells by the acquirement of superiority on the part of one or other of the parents, such as exercise, rest, feeding, fasting, fatigue, a certain mental state or attitude, produce at the best but the merest temporary somatogenic variations, and it is consequently hardly reasonable to suppose that they exert any influence whatever upon the germ cell since it has been shown many times that characteristics acquired by the parents for generation after generation do not make their appearance spontaneously in the offspring. Weismann says in this respect: "The transferance of sex has usually been looked upon as an act of transmission. This cannot be the case, inasmuch as every germ plasm contains the primary constituent for both sexes, and the process of transmission itself has evidently nothing to do with the determination of sex. As already mentioned, it does not by any means follow that because a child is a female its primary and secondary sexual characteristics will resemble its mother's. This indeed has long been known, but has not led to the general recognition that sex is not transmissible at all, and that on the contrary the primary contituents of both sexes are passed on from both sides."*

The last objection we shall urge here against the Starkweather hypothesis will be one which also will

* Beside those species with which one sex is constantly superior to the other, there are instances where, as with polygamous species, a number of females are ruled by one male, who for a long period of time kills or drives away any younger males aspiring to the leadership. Notwithstanding the leader's proved superiority, just as many males are born. The American bison is a case in point. This fact would also account for the majority of females noted in some species.

* "The Germ Plasm." A Weismann. Scribners' Contemporary Science Series, 1898.

serve to test many other theories. This is simply the birth of twins of both sexes. The term "twins" is used here in its popular meaning of two children born of the same mother as a result of the same pregnancy. True twins are always conceived at the same time, originate in the same ovum, and are always of the same sex, but two ova may be impregnated at the same time or at different times varying from twenty-four hours to one month or more apart and yet the children be born at the same parturition constituting not true twins but rather double births. These may be of the same or of different sexes. Where there is the fact of a double birth it is quite possible for the two children to possess different fathers. Instances of this have been recorded in medical literature. Now where we have a male and female child conceived, we will say scarcely twenty-four hours apart, we must suppose under the Starkweather hypothesis that the superiority of the parents has been subject to a very rapid alternation.

Here it might be well to consider this subject of twins in greater detail, as it has some important bearing on the discussion to follow. Gould and Pyle quote Hippocrates' observation that "twins are always the result of a single coitus and that each infant has a chorion," with the comment that both kinds of plural gestation, monochorionic and dichorionic, were known to the ancients.* This view of Hippocrates cannot be corroborated. Where twins are the result of one coitus they are always of the same sex and are enclosed in one chorion. It will be found in fact that there is some confusion and difference of opinion existing even to-day among physicians upon this matter of twins. It is difficult to see why there should be when there is no material disagreement among the authorities. Edgar has well summed up the matter in his *Practice of Obstetrics.* He says: "Twins may be derived from one ovum from each ovary, from two ova from the same ovary or from a double ovum both neuclei being fertilized, or from a division, which takes place in the blastoderm giving rise usually to conjoined twins." He further says that twins originating from a single ovum are always of the same sex. He thus describes the arrangement of the membranes: "The decidua vera is invariably single, the decidua reflexa is double when the ova are attached to parts of the uterine wall widely separated. The chorion, since it takes its origin from the zora pellucida, is invariably single where the twins are derived from two nuclei within a single ovum, but double when they originate from separate ova. Originally the amnion is always double for it is derived from the embryo although before delivery there may be an absorption of the septum between the products of conception. Primarily the placenta is double, for each fœtus produces its own allantois and the placental region resulting therefrom. In the case of twins resulting from different ova the placentæ may remain separate but fusion generally occurs. There is, almost without exception, an anastomosis of the vessels of the placentæ of twins from a single ovum, hence if there are two distinct ova there may be expected two sets of membranes, while in the case of one ovum there will be a double amnion with a single choirion and placenta. In a very rare number of cases only one amnion has been found, but the partition between the two had probably been absorbed."*

In the course of a series of controversial letters published in the *Medical World*† a few years ago, a number of physicians quoted their personal experiences as tending to show that twins of different sexes may possess but one placenta. We pointed out that in all probability had a closer examination of these different placentæ been made more or less distinct evidence of the fusion of two placentæ might have been observed. One case was quoted in which the attending physician stated positively that there had been but one placenta although the twins were of both sexes. We went to considerable trouble to procure this placenta and found on close examination undoubted evidence of the fusion of two placentæ. We have attended a considerable number of twin births but have never found an exception to this rule. Twins proper are *always* of the same sex, nourished through one placenta and enveloped in one chorion. The two or more children are very often counterparts of one anther, "as alike as peas in a pod," not only in appearance but in temperament. Even mothers must sometimes improvise marks of distinction. Not only are they alike physically but the bond of sympathy is very great. It has been noted that when one falls ill the other is likely to become similarly afflicted. All other so-called twins are double pregnancies, they may be of the same or opposite sex, but are conceived at different times, hours, days, weeks, or in rare cases even months apart.* There are thus a number of reasons for believing that homologinous twins are invariably conceived at the same time. It is important to remember in this connection that while a developing ovum may possess a double primitive trace, it has never been fertilized by more than spermatozoön. An ovum is often attacked by several spermatozoa, but as soon as one succeeds the others give up the struggle as far as that particular ovum is concerned. It is thus manifestly impossible that one division of the egg might be fertilized by one spermatozoön and another spermatozoön happening along later succeed in fertilizing the other division. *Conjoined twins are therefore the result of a simultaneous fertilization.*

George Jackson Fischer thus sums up what teratology has to teach us. He says: "For the past quarter of a century the writer has taken pains to carefully examine several hundred specimens of human double monsters and even larger numbers among the lower animals which are to be found in the pathological museums in the principal cities of the United States and he is able to state that he has never seen an exception to this law. The literature of teratology contains reports and references to no less than five hundred cases of human double monsters and also great numbers belonging to the beasts and birds and there is not a single modern instance in which the male and female organs are found to coexist. . . . It is safe to say that duality of sex will never be seen in a double monster."* Hirst and Piersol, who have made such valuable con-

* "Anomalies and Curiosities of Medicine."

* J. Clifton Edgar, "Practice of Obstetrics."

† *The Medical World,* Sept.-Nov., 1902.

* The children are born at the same time because when the elder arrives at full term the labor breaks up the fastenings of the other, its birth soon following.

*A Reference Handbook of the Medical Sciences, 1889. Subject, "Teratology."

tributions to teratological literature, confirm this observation.*

The theory that in conjoined twins there takes place a fusion between the two individuals after development has begun is one that is no longer tenable. A consideration of the process of development combined with a review of reports of dissections made from time to time will show why this is so. At any rate the view is now general that conjoined twins are the result of an incomplete fission of a primitive trace rather than a subsequent fusion of two embryos.

It could perhaps be held that this demonstration of a unity of sex in individuals whether united or not developing from the same ovum does not prove that sex depends on the time of fertilization, since the sex may be the same for the same reason that other characteristics are similar. With ordinary homologinous twins this similarity, as we have pointed out, often exists, and it is reasonable to suppose that children springing from the same ovum and fertilized by the same spermatozoön should be similar. *But are they always similar? In point of fact often they are not.* No doubt many physicians could give an instance where children of the same sex, inclosed in one chorion and nourished through one placenta displayed even at birth physical differences and very early manifested marked temperamental dissimilarities. Perhaps the best examples of this can be noted in conjoined twins, including here not only children joined at some part of their bodies by a band of more or less breadth and variety of tissue organization, but also, as in those cases, exemplified in the Tocci brothers, showing a complete fusion of one part of the two individuals. There have not been many instances where children born thus have lived long enough to be carefully examined or their mental and physical development watched. Nevertheless there are a few cases of this kind recorded in medical literature and in two or three instances the history is a fairly complete one. There can be no doubt but that these conjoined twins are often quite dissimilar *in everything but sex.* In the very well-known case of the Siamese twins, Chang and Eng were said to have been temperimentally very similar, liking and disliking the same things and never disagreeing in any way, but physically there was considerable difference between them, Eng being much stronger and possessing a decidedly better constitution than Chang. The North Carolina sisters, joined back to back, were born of negro parents and lived to adult age. They were said to have been remarkably different in temperament. The twins known as the Hungarian sisters were born in 1701. They were said to have been well formed and of pleasing appearance in every way except that they were united at the second sacral segment. They lived to be twenty-three years old. As might be expected they suffered from the infectious diseases, measles and smallpox, at the same time, but other diseases they had separately. Judith was not as strong as her sister Helen. Much has been written about them, but their mental history is not as complete as could be desired. The Tocci brothers, born in Italy, while possessing one body from the waist down, do not resemble each other very closely in conformation of the head and facial features, while there is quite a contrast between the two in mind and character. Dr. Harris says that such twins are never on exact equality of physical vigor. He further says: "United twins rarely bear a strong likeness to each other and in this respect are quite in contrast to normal twins and triplets of the same sex. . . . As a rule they are unlike in physical conformation, in measure of health and strength, in taste, and in mental characteristics."*

All this would seem to show that the conception that sex may be considered in the same category with other inherited qualities such as the color of hair, conformation of features or physical peculiarities has been a fruitful source of error and the germ of much useless speculation.

The view that the mammalian ovum is not primarily male or female but that it possesses equal capabilities of developing in one direction or the other is not uncommon. The ovum is thought to be in all probability in a state of delicate equilibrium so that a very slight influence may serve to turn the scale for the male or female sex as the case may be. Both sexes are thus potentially existant in the germ cell. There are a number of facts which may be adduced in support of this view. Some lower forms of life manifest a true hermaphroditism; tadpoles often seem to linger long in this neutral state before they finally take on definite male or female characters, and in the oyster the same set of organs fulfils both functions but at different times.* Darwin has called attention to the interesting fact that variations of some secondary sexual characters as a peculiarity in the growth of the beard may be inherited from the grandfather through the mother. This transmission of a peculiarity of a secondary sexual character through a parent of the opposite sex proves that secondary sexual character of one sex are latent in the opposite sex.* The organs of generation of each sex in themselves show many striking similarities, each peculiarity of one set having its analogy in the other. This fact has been long noted. Next it has been shown that secondary sexual characters depend very largely upon the integrity of the primary sex organs. Also attention has been called to the fact that after castration and in old age the secondary sex characters of the opposite sex are often developed. Furthermore organs and functions belonging more particularly to one sex exist in a rudimentary form in the opposite sex.

We thus see that while the primary sexual characteristics of one sex have their analogies in the opposite sex, they being in fact practically the same but functionating in a different manner, a whole host of secondary and tertiary† sexual characters of one sex are either latent rudimentary or manifested in the opposite sex. With these facts before us is it too much to suppose that the ovum is potentially both male and female? Weismann assumes the sexual determinants to be double, consisting of two groups of biophores and in all sexually dimorphic organisms he believes that the germ plasm

*"Human Monstrosities." Philadelphia, 1891-3.

*"The Blended Tocci Brothers and their Historical Analogues." Robert Harris, A.M., M.D., *American Journal of Obstetrics*, 1892, page 460.

*"The Evolution of Sex." Geddes and Thompson. Scribners' Contemporary Science Series.

*For a discussion of the relations in general between heredity and secondary sexual characters, see Darwin's "Animals and Plants Under Domestication," Chapter XII.

† By "tertiary sexual characters" is meant those characters manifested only in the aggregate, such as the greater height of men, the greater weight, in proportion to size, of women, etc. The term was, we believe, introduced by Mr. Havelock Ellis.

must contain other double primary constituents to account for the secondary sexual characters. Now whether this is so and the germ plasm be thus truly hermaphroditic or whether it is neutral is not of special moment here, but the fact that it originally is in a state of equilibrium and neither distinctively, or at least continually, male or female is extremely important. Weismann, referring to this point, says further . . . "we are ignorant of the forces and substances here concerned, but we at any rate know that the idioplasm of the primary germ cells in the higher animals is still capable of giving rise to either kind of germ cells and that the decision as to whether the germ cells will develop into ova or spermatozoa occurs at some early stage in embryogency. In the eggs of the bee it takes place in the beginning of the embryonic development long before the first primary germ cell is differentiated, while in other animals it perhaps occurs at a later stage. The well-known researches of Siebold and Leuchart prove that at any rate in the case of bees this decision rests on the occurrence or omission of fertilization.* It occurs then at a time when the germ plasm which controls the new organism is constituted."†

In reference to hermaphroditism Geddes and Thompson, in their very interesting and suggestive work on the evolution of sex, say: "There can be very little doubt that hermaphroditism was the primitive state among multicellular animals, at least after the differentiation of sex elements had been accomplished. In alternating rythms eggs and sperms were produced. The organism was alternately male and female. Of this primitive hermaphroditism there is probably more or less of a recapitulation in the life history of all animals. Gegenbauer states the common opinion in the following cautious and terse words: 'The hermaphroditic stage is the lower and the condition of distinct sexes has been derived from it.' Unisexual differentiation by the production of one kind of sexual apparatus takes place at very different stages in the development of the organism and often when the sexual organs have a very high degree of differentiation. The first structural stage in the separation would probably be the restriction of areas in which the formation of two kinds of cells still went on at different times in one organism. In different individuals the opposite tendencies we have already spoken of more and more predominated till unisexuality evolved out of hermaphroditism."*

The bisexual rythm which is here hinted at will be referred to later, but the many excellent reasons there are for believing that this primitive hermaphroditism so common in the lower forms of life may be considered as constituting the chief sex characteristic of the germ plasm itself, should be held in mind.

Writers on the problem of the determination of sex have usually depended largely upon statistics showing the proportion of male and female births, with different classes or races, or in different districts during certain periods of time. From these they have drawn conclusions usually favoring their own hypothesis. It should be unnecessary to call attention to the unreliability of this method unless it is carried out with more thoroughness and followed up through a longer period of time than as far as we are aware any one has heretofore attempted. The statistical method here is subject to the same objection that may be urged against it as applied to any other problem. That is, it must be more or less limited to certain districts or countries and at least to certain periods of time. We know that there are some problems to which, from their nature, it may be applied even in a limited degree without feeling that it may be instrumental in leading us astray, but this question of the predominance of male or female births is not one of them. It is indeed doubtful if for every set of tables from one country showing a predominance of a certain sex, another series from another country showing a predominance of births of the opposite sex might not be adduced to offset them. Statistics have been brought forward to support the most widely divergent theories, some requiring a predominance of male births and others demanding a predominance of female births for their support. While a minority may thus dispute this question, the belief that there is a continual tendency toward the maintenance of an equality in numbers between the sexes is prevalent not only among biologists and sociologists, but among mankind in general. It may be considered as almost self evident that there is something which maintains this balance, for if there were any definite factor (such as nutrition) creating a tendency in one sex to predominate, it is extremely doubtful if, acting over extended periods of time, or being augmented or diminished under certain conditions, its existence would not have been recognized long ere this.* Darwin held that there is undoubtedly a tendency toward the maintenance of such a balance, and gave us a tentative explanation of how it might be accomplished through the agency of natural selection.

Starkweather collected a number of facts bearing upon this phase of the problem and his conclusion was that there is undoubtedly constant tendency toward the maintenance of an equality in numbers between the sexes. He does not weary of insisting that this natural maintenance of a balance is one of the strongest arguments in favor of his hypothesis. While several reasons have been cited why we cannot subscribe to the theory of conference of sex, by superior opposites, he is undoubtedly correct in his contention that a balance in numbers between the sexes is in general maintained. It should now be conceded that at least as far as mankind is concerned we are safe in assuming this to be so. The question next arising is whether or not there is any other method by means of which this balance could be maintained. We believe that there is one and only one.

Tick, or spotted, or Rocky Mountain fever is the subject of a preliminary report by H. T. Rickets (*Jour. A. M. A.*, July 7, '06), who was unable to find a parasite in the blood. He did, however, transfer the infection to guinea pigs and to a monkey by inoculation. The relation of the tick to the disease has not been fully cleared up; this is a matter very important to determine fully.

*Males being said to develop from unfertilized and females from fertilized ova. This his since, however, been denied.

† "The Germ Plasm." Weismann.

* "The Evolution of Sex." Geddes and Thompson. Chapter VI.

*Mr. R. C. Punnett, after a series of comparisons of male and female birth rates in the slums of cities with births recorded in Burke's Peerage, concludes that nutrition has little or nothing to do with determining sex in man. See Proc. Cambridge Philosophical Society. Vol. II., pp. 262-267.

RIGHTS OF THE PARASTHENIC.

BY T. H. EVANS, M.D., PHILADELPHIA.

IN defending, or seeming to defend, that person whose acts have been called immoral, antisocial, or criminal, the countercharge of "sentimentality" is one of the least to be encountered. That he may have rights, then, is difficult to press beyond the fiction of the law.

But, reader, can you picture to yourself the childhood mind which thrilled with horror at the fate of enchantment, and the mysteries of all that realm in which unfriendly powers could seize upon the body of a luckless one and convert it to some vile purpose or object? Then think of the state of those, not unknown to sober fact of to-day, in which a warped mechanism or parasthenic vitality, diverts the actions and transmutes the person of the individual. I can think of no "spell," no enchantment, more hideous than the slavery of good faculties in the mind of criminal or morbid trend.

For every criminal presents in some respects a "good" side, and the fact that he has some friends is proof of some redeeming faculty. The unlooked for generosities and kindnesses on the part of criminals whose very name excites disgust stand as white and pure marble in the cemetery of their degradation. Lombroso, and others, remark on the peculiar good traits of the "worst criminals." They are surprised to find these evidences of any goodness. How stupid! For the essence of antisocial acts is to be found in difference of *motive,* and difference of mental ground in experience. To be more explicit, I mean to say that in each of us there are certain memories which are associated with each object, or act. For the lace-weaver there are muscular memories aroused at each sight of the fabric. For the victim of eye-strain each sight of print, or the lines of musical notation, there are memories of pain, or reflex distress. It is no plagiarism of Ruskin to assert the need of every child having that broad experience which will establish in him a fuller conception of the creation and body of the complexes of civilization, the true physiologic notation of the acts and ideals of mankind.

For the want of this sympathy, the degenerate and the defective may become antisocial, and usually do on account of very aloofness, remaining subject, at the same time, to the needs and passions of the race. In earlier papers, I, as well as other writers, have urged the need of reservations in which to place degenerates and defectives. I can not agree, however, with the efforts of some to educate these unfortunates in lines similar to normal schooling, for their ideals are limited to the nature of their essential physiology.

The best reason for asking, indeed demanding, sympathy for those branded as criminal, is the fact that the normal, sane, and mentally keen man can and does take advantage of his brother to-day by keeping within the written law, and yet defrauding the lesser intellect. The fact that the criminal is the one caught, is proof of his mental deficiency. What he did had been the result of his effort to acquire property or pleasure by reckless and violent means, and in so doing he has lapsed from the prudence which marks a well-balanced mind. For if, as in crimes of passion or revenge, the violence is the end desired, he is reverting to animal and pristine standards of conduct; and if, as in crimes of cunning, there is an object to be acquired or possessed, again we can discern decided evidence of the weaker mind battling the stronger, because of the failure to acquire within the letter of the law. So, in our methods of punishment, we have simply said, be cunning enough, or be condemned.

Crime, then, is a failure to measure up to a standard of strength in playing the "Game."

The crimes of each century are simply the efforts of the weaker ones to get the good things in ways not permitted by the wishes of the majority. It is right for the soldier to take life, as a soldier. It is right for the state to do that which it is wrong for the individual to do. In other words, it is wrong for us to do, acting singly, that which, acting together, it is not wrong to do. The essential nature of crime is here attacked with a vengeance. But the logic cannot be escaped.

In other ways we are wretchedly unjust. For we excuse the idiot, or the insane, crimes which if done by a sane man acting under temporary excitement, or worry, we do not. Yet how much more pain we cause to the appreciative mind than we might in the mind of the idiot or the perfectly irresponsible!

His punishment becomes a martyrdom. We have changed our entire psychology. James says that we are sorry because we cry, not that we cry because we are sorry. Where once we would speak of a man's mind being "lost," or of his being possessed by a devil, we now speak of his alterations in personality, and the acts of inferior circuits of the intellectual apparatus. The individual is not individual, it is appearing. And from time to time the person may present so different an equation as to act from radically different motives. In the return to his better self, how acute must be his suffering, if the acts of the lower personality have involved his body and fortunes in disgrace!

Parasthenics are those whose powers of inhibition are of fluctuating influence, and whether due to some strain in the physiology, or some pathologic condition, or to some inherent quality of the tissues themselves, the motives of the person are so altered, from time to time, that in periods he approaches or enters the territory of true irresponsibility. These have to meet life with no certain knowledge of their weakness, and suffer for that for which they are not accountable.

Few of us would care to be the one to carry out the provisions of a death sentence. If, for reasons of personal dislike of the criminal we would so elect, is not our train of thought very similar to that of the criminal of occasion, or the criminal of passion? In our case founded on actual conditions, in his case founded on a misconception, but that does us the less credit, since our superior balance and understanding of the facts should guard us, certainly if we expect so much restraint of the other, from any outbreak of the elemental.

Our fatuous treatment of sexual inverts is in point. And it is more foolish on our part to prevent them from childless practices, because why should they bear children? On the other hand, if their peculiar nature is allowed full bloom all their possible benefit to us may be reaped, and their poems, their paintings, their literature becomes the heritage of mankind. A starved nature is not to be expected to become productive, and the laws of being in forbidding them children, may destine some splendid work of art, more valuable than a tainted progeny. The race will be perpetuated, and

there are enough normal beings to do so. Let our efforts be to find each his métier, and not lay down single lines of production and life.

False notions of necessity in sexual matters lead to dangers worse than truth is let to tell. When we read of the execution of some colored youth (for the usual crime), some youth barely seventeen years in this world, at whose door do we lay the ultimate judgment?

I have in mind a particularly vicious case, in which two women were assaulted, and yet the criminal so young knew neither his father nor mother. He asked for forgiveness, and accounts say, wept softly when he finally faced the gallows. Chained, he was hurried to the execution and then paid as much as any man can pay—his life—for his error.

Thank God that no one I care for has been wronged by such a brute! But, I ask, what is the country doing to protect those I hold dear? Do these executions really inhibit? No. I admit that even the insane may be frightened, but only while in custody.

At large, the insane may become more cautious, and thereby succeed in making it harder for us to outwit him. I am afraid that we have taken the wrong end of the problem.

In this contest of intellects and passions, we may even give the criminal new purpose in the pleasure of outwitting us. We have raised antagonism and lost his friendly faculties. But still more, we are creating a fatal atmosphere, whose psychological effect will add to the damage of the future.

Picture the train of circumstances leading to the prison and the death on a gallows!

Born of parents, not married, but vicious or unknown, perhaps, to the criminal. Growing up in vicious surroundings. Or, if well care for, physically, by some bodily defect, not able to enter into normal life with his fellows. I mean, the victim of eye-strain, who fails in school. Or the neurasthenic, or the parasthenic who is periodically changed, and can not persist in his occupation, whether by inability to do the work, or by reason of troubles arising out of actions done when more or less irresponsible. The boy grows up, and becomes adolescent, he finds his sexual nature. This in such cases is often precocious. Circumstances do not fail to find in this his primary undoing. He needs money to accomplish his ends. He needs many things, and in these precocious needs are additional sources of crime. But in the fluctuating mind, and the accessional outbreaks of diminished inhibition, we are to look for the truest reading of his downfall.

The crime is done—let us say, murder. I read of the boy and his companion in crime in the jail. At last when too late, the hand of society strikes them.

I have in mind two such boys, who were hanged. While awaiting their end, they wrote some verses, which I insert. We may admire a great poem, and respect its author. Does the pity for blind striving after the beautiful have to ignore the efforts of stunted and deformed minds? O, enchantment, and slavery of the better by the worse! There is in these poor stanzas a message which carries a call its own in the very imperfection of handling the symbols of expression. The very foreignness and imperfection tells us that the writers were not of us. The foreignness is that of one who has been forever denied the heaven of expression.

A convict in a cell, a dungeon,
Spoke of home and loved ones dear,
Said his cellmate in a whisper:
"Do you think the end is near?"

"How I long to see my mother
In a cottage on a hill;
God bless them all," I heard him whisper,
As with tears his eyes did fill.

"If I die before I see them
Tell them how I longed to-night
To have my mother's blessing
As I leave this world so bright.

"And how often my little sister,
With shame has hung her head,
But I hope she will forgive me
When I'm numbered with the dead.

"How often my little sister,
Bonnie blue-eyed Nell,
How often I have blessed her,
From my lonely prison cell!

"My brothers have turned against me
Since to prison I have come.
If they have I cannot blame them,
For bad company I did not shun.

"My mother's heart was broken
To hear of her wayward son,
To the gallows he was sentenced
For a crime that he had done.

"Take this keepsake to my mother,
'Tis but a lock of hair;
It is all I have to send her,
She will treasure it with care."

As he handed me the keepsake,
The spark of life had almost fled,
Said his cellmate in a whisper,
"The convict in his cell lies dead."

These stanzas were written by two boys, jointly. The workmanship shows a variable point of view, not well handled. But most of all, the lines show the limit of symbolism to which they reached. Traditional phrases, hackneyed, but evidently thought poetic, and accompanied in the minds of the writers with the keenest emotion, are here.

Reader, enter their cell. Be one of them. Your life is approaching its end, and a violent one. Each day as it dawns may be the one in which a group of stern men should take you and pitilessly bind you and kill you. Are you sleepy? Do not go to sleep. You have not much time to go on thinking, and it is precious. Are you thinking of things you had planned to do? No matter, that is all arranged, and nothing shall disturb you soon.

It is all a hideous mistake! Am I not to awake, and find that my home is around me, and that I am safe in my old room, and my mother bending over me? No. No. Those old days are past for good and all. This is the real, the very real in which the drama goes onward with clocklike precision. And no pleading and no excuse can avail in this train of circumstance that pushes up to the shadow of the gallows. A hard situa

tion for a boy to act in! We are sending boys through this often. Society does not flinch from extinguishing the life, coolly and exactly, which, if stunted, is the son, the daughter, of us and our mode of life.

If we do not kill, we brand. And then turn back to associate with those only whose evil natures fear no brand.

Yes, this is food for the thoughts of medical men. What are we doing to take charge of mental and moral incompetents in time to prevent crime, and what are we doing to reform them when they have openly gone wrong?

I am working among many victims of drug habits. And these young men, and young women, present some of the finest qualities along with some of the most depraved. Who of us can point out a place in which these could be given safety and opportunity? The opportunity to work, to write, to study, and to develop, which they have a right to. We have given them life. Let us give them what makes life full and beautiful.

Sometimes I question our right to deprive them of the drug, or the alcohol. In this way, at least. They suffer without it, and seem cut off from a species of food. They are less able to control their actions, and do crimes as much from faulty inhibition as from the desire to obtain the wherewithal to buy the supplies of the drug in use. In depriving them of their drug we ought to give equal attention to a normal hygiene, and a substitution of new interests in life within the powers of their body and mind. How futile to prescribe study for a weakling whose eyes are one near-sighted, and the other farsighted, with asymmetric astigmatism! Add to this a muscular imbalance and a fault of innervation and the problem becomes a farce—to all but the unhappy victim of fate.

But what shall we do with the criminals which are around us? Are we to foster them and give them a life of pleasure and one long vacation? I hear many similar exclamations.

Robert Hunter has shown that many sane and well-balanced men and women are unable to find opportunity to work, and to get the things which make life really endurable. How then can we demand of the abnormal and the imbalanced the accomplishment of that pursuit of life which is more than we who succeed can assure all our fellows?

The question is simply one of *media.*

The criminal, or the degenerate, if let free to follow out his own impulses, will settle in a congenial environment. Let us wall in our tenderloins. Let one law carry in these spaces, and another outside where the average organism lives by preference. If any enter this confine let him be searched before entering and on leaving. Let those who leave be placed in a temporary place of moral disinfection. Of quarantine. But do not permit free entrance and exit. In addition, let us have country reservations to which voluntary, and others, to which involuntary cases may be sent and guardedly develop. Separation and individual study of cases is the keynote.

But within limits, it should be allowed that an individual has the right to exercise his functions, however evil in our sight. What we may do is to protect from these evil influences any who do not think likewise. Let us remember that we owe the opportunity of beautiful, good, and true experience to every soul we generate. And that we are responsible to the extent that he has this opportunity. But if he elects to do and think according to motives opposed to our standards, are we able to say that we are right and he is wrong? What is the ultimate good? The question still asks itself. But we have a right to restrain and protect, according to the best light of the majority.

To the medical man has come a great moment. The day is one in which he is looked upon as the wisest and most learned in what constitutes human happiness. I call upon all to unite in finding out this path. I accuse all who refuse to concern themselves in this serious question, of worse than the crimes with which they so lightly charge others.

When we hang a man we admit not his failure, but ours.

Yes, we are his parents and he is our child. The supreme test in the Old Testament, was that of the father asked to slay his child. God refused to press it. Rather did divine Justice turn upon Himself, and pay the penalty, in heavenly symbolism. Until we have paid the penalty of our own greed and selfishness and given to each individual the opportunity, the medium, in which he can best develop what in him is, I assert we have no right to take life from the criminal, or to imprison him in such a way that it is punishment and not improvement.

Give him some part of each day, while in restraint, in which his volition and expression may grow. And the medical man, the wise and appreciative psychologist, is the only man fit to oversee the places of restraint in which our criminals are to be cared for.

Let us grant the lawyer his duty in apprehending those who overstep the law. But we shall and must demand that living beings belong to the charge of those who study and work with the field of physiology and psychology.

This becomes so much more to the point in this day when laws on every conceivable action of mankind are being enacted, for in some states the mere rolling of a cigarette was termed a technical "manufacture" and one violating this law stood with murderers and felons and criminals in general in the dock on the morning of trial!

In no sarcasm I beg let us have reservations in which law is less rigid! If to the pure minds and wise intellects of the legislators so much is criminal and to be reprehended, let us set apart a few acres in which on Sunday and in freedom a man may draw his breath! Here we may go to turn our toes out, or in, as fancy strikes us. But best of all, if it is right for the majority to live under the tons of legal statutes, have spaces in our free country in which our heads may look up to the light of heaven and our faces wear what expression they like.

Crime is an infringement of the rights of body or property on the part of an individual. The State can do no wrong! Are we to have an endless sucession of laws just because it is the time of the lawmakers to meet? Why multiply crimes? Alas, big properties require big protection! The simplicity of early days is not developing into a beautiful civilization, worthy of the trouble to maintain its proportions, but into one that seeks gewgaws and toys. To guard these, and to supply them in increasing amounts, the fiber of our race is crushed and its life blood extorted.

My weak words will not turn the tide, never fear,

but in sending out this paper I have the hope that many will hear the call of individualism, and the right to be and do and develop, and answer, in no uncertain voice, that along with the average man and his career there is justice in preserving the rights of those not average, or even criminal.

This is more plain to all when we remember that these same criminals may, and usually do, have good faculties which could be utilized. The convict often makes curious and intricate mechanisms. He may be a painter, an artist. It is a crime to hang a poet. It is a crime to allow a poet to commit murder. Put the boot on the other foot. Why do we allow criminals to effect their crimes? As to parasthenics, and the irresponsible, what a field of duty!

3353 North Front street.

ROOF RECREATION IN SUMMER.

BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA, PA.

THIS paper is written in the oppressiveness of the sultry month of August—the month of persistent smudgy stickiness, when everything seems to exude—when skin, mucous membranes, all that one touches or can experience are somehow representative of derisive annoyance, when necessary respiration helplessly yearns for the comfort of refreshment, when stomach and bowels resemble wavering fringes of functional revolt, when appetite is the fugitive of qualms, when sleep is the weary recruit between bidden repose and decomposing sweat, when the gleam of morning is grasped for at the front doorstep ere the sun swings up again as the smiter of happiness and the lasher of life—when ambition's anchor has wilted into a dishrag of debility, and the punishments of God seem ruthlessly beating down to helpless earth with the exhausting breath of consuming fire. Such have seemed our August days, 1906.

It is always nice to think of something pretty to do. I once knew a young lady of sensitive education, who had literally imbibed the per column ideality of a popular publication, and henceforth strenuously applied her wakened desire to have window ledge boxes made for the delights of window gardens. These were duly provided by the carpenter, installed in appropriate form, and the best of woods earth found and carried home to render these ideal gardens prolific of joys. Then promising seeds of pleasure were planted along the middles of parturient areas, blooming plants were inserted in the corners to proudly flag the field, a new watering-pot was ordered into sprinkling requisition, and the developments of new creation expectantly watched. It was a delight to witness this city amateur's ardor as a promoter of floral beauty upon her bedroom window sills. Emotional creatures are kites of temperament in the veerings of the breeze. One day for change she fancied that a run to the seashore for threescore hours would tide her enjoyments to more beamy crests, while the window gardens were committed to the angel of chance. When she returned a hot sunshine had baked her boxed soil, her corner floral tenants had doffed their sensitive beauty into dreams of wilt and atrophy, with the result that the florist must be promptly visited, and a renewed stock of sappy stems again bobbed their blooming crowns over the late graves of the departed. The ensuing stunt of procedure was to inquisitively disinter special lines of buried seeds to see if these were actually sprouting into visible signs of prospective vitality. Some sprouts appearing, the disturbed earth was again smoothed over—to be reopened two days later to break the natural course of growth to discover what progress the belated seeds were gaining. A bit of trip to a popular mountain resort was the next reconnaissance, and another week of disused watering-pot in dry weather collapsed this enthusiastic campaign of window gardening with the drastic disclaimer that its scheme brought more nuisance than satisfaction, that the long caskets of dull, ungainly soil must be deported from sight and service to the shadows of the cellar and the game dismissed. The change from the natural to the artificial garden bore only disconsolate fruit.

A brother doctor may here ask: "What has this prologue to do with a medical subject in a medical journal?" Every discriminating reader may discern that THE MEDICAL TIMES has aloft a pennant on its flagstaff which reads: "Journal of Collateral Sciences." At the collar-line beneath the heading of its July editorial column we read: "Life is a series of surprises." As I study it, these monthly aphorisms of THE TIMES lift the mental apprehension above the smudgy doses of epsom and aloes to planes of pleasing contemplation of pearls of moral and spiritual gain to drudging hearts. The mind is the greater adjunct of the mortal body. We need to avoid the narrow groove of even professional existence. Our psychology grasps for the relief of a wise maxim, the smile of a boutonniere of illustration more often than tense descriptions of green apple colic and nominal repeats of drug dosages. For one, I always look for the editor's mental formula for each successive month at the collar-line grip of the editorial column. It is rational. The immortal mentality needs logically to rise a degree higher than the surface of ugly tongues, the revolting reservoirs of stomachs, the offensive purlieus of the bowels of human existance. We need a breath of nerve relief from the monotony of nasty conditions that depress the plodding doctor's horizon to reflections of the milky way of babies' foods, sour stomachs and offensive napkins. And so THE MEDICAL TIMES, anon and yet again, strikes a luminous match and lights a path-lamp to gleam for the weary wayfarer who would plod safely across the oozy boglands of spumy microbes and croaking frogs. The August TIMES rises to the zenith of inspiration with another of the immortal Emerson's gems of thought and truth: "The soul knows only soul, the web of events is the flowering robe in which she is clothed."

This preface bears along its little taper of purport, that limns into relative profile the attitude that our subject, Roof Recreation, assumes as a means of service to children and families in heated terms of weather. Some years ago, in his activities of thought, there lived a prominent medical editor who repeatedly advocated resort to roofs of dwellings for children and families as supposed relief from the closeness of narrow streets in denser locations of city circumstances. Newspaper paragraphs occasionally repeated similar modes of relief to the poor in slum districts where streets and alleys are unhallowed in hygiene and human comfort under sweltering conditions. At cursory glance the suggestion appears romantic, attractive, almost poetic for an atmosphere of comforting domesticity—in case the danger lines were amply guarded—a matter of considerable expense. A roof elevation, with pleasant comradeship added, seems to lift the personality with the widened ex-

panse of view. Roof gardens have been made features of revelry and dissipations by the gay and risque element of certain lines of society. The get-awayness or out-of-sightness of such retreats has drawn zest to desire for exclusion from the common walks of observation, and whetted the relish for temptation of license beyond approved limits of ordinary discretion. Roof gardens may be even furnished with exotics of many climes and evergreens of choice adoption, yet the wines may disguise the serpent and the frolics disport the garb of Satan. Even as an observatory, a roof is no better for flowers and ferns than is a horticultural display founded upon the ground.

The advocates of roof for playgrounds and sleeping quarters for children and others seem blind to the desperate fact that the elevations of roofs mean the immediate proximity of chimneys that are constantly conveying to the level of the roof air the smoke and soot and exceedingly poisonous carbonic oxide gases from every fireplace, range, stove or furnace in use in the neighborhood. Possibly the disgorged smoke and gas from railroad locomotives, from a nearby stationary engine house or iron works may be polluting the breathing-air more densely on the level of the roofs than on the level of the streets beneath. Any child might innocently from the roof of my house build games with blocks against the sides of the chimney that is "going" full blast as the outlet of the coal gas from our kitchen range; that child would need be carried down to a sick-room gasping with croup or acute bronchitis, or even pneumonia, because of the poison inhaled during a few hours of tragic amusement. A diphtheria from contact of gas-poisoned air upon the tender tissues of the throat when breathing is ten times more certain and more fatal than the folderol contagion from a bacillus that supposedly infects the mucous tissues of the throat and breeds a riot of local and constitutional destruction. If the medical profession ever comes to a sane sense of the common and natural causes of most disease, there will be many big jobs of tomfoolery abandoned with a corresponding increase of happy and easy recoveries, to say nothing now about the saving of expenses. Again, roof recreations among gassy chimneys would produce more anemia, more dullness and languor, more headache and muscle pain than would playing upon the dirty street. This doctrine may rouse some questions of thought, but its truth can never be controverted. Go upon my three-story house roof and hold your face and nostrils ten minutes fully over either chimney when "going" at full rate of service, and you will come down a convinced but possibly suffocated man. Then what about a child set to amusements on such location? It is evident that the inconvenience of reaching most roofs has saved many lives. How could any consumptive person ever be expected to improve or even exist on roof gases? The natural drafts of air into windows of top stories too often suck along the chimney gases discharged just above the roofs. When such is the case you may be considered well as usual when you retire, but ill with a "fresh cold" when you rise next morning, because throat and chest have been excoriated with poisoned air during the hours given over to the intended recuperation of sleep. This being so inside the room, how would one be likely to fare if out upon the roof with the chimney gases falling thick about you? It will be said that there may be felt on the roof the motion of the air without hindrance—the advantage of a breeze. But to sit or to play in a sizzling hot air when the motion of which only wafts to and fro its invisible freight of subtle gases along the planes of chimney tops, is certain to prove an unhappy waste of time and vitality.

A special objection to using the house roof as a recreation resort is the fact that most city roofs are painted sheets of iron or steel, in parlance known as roofing tin. In dry weather, with the broiling sun beating upon this field of metal, its temperature becomes intensely and dangerously high. While burning to the touch, the accumulated heat of the roof is radiated into the faces and the breaths of any occupants there, of whatever age, with direct possibility of serious physical harm. Therefore, in this special sense the situation for recreation would soon prove to be more unsanitary and unsafe than the ground floor of a decently clean indoors or the outdoor shade of a few trees. Tin roofs, furthermore, are joined by relays of strips eighteen inches wide, with their edges clamped together in the form of spines that rise nearly an inch above the flat level of the roofing. The accident of tripping and falling, with face striking upon one of these numerous cutting upright edges, would naturally scar and mar for life the beauty of features, the more regrettably if belonging to a handsome girl. Moreover, any damage done to the lines of clamped tin by running over them with hard shoes is quite certain to open a minute crevice here and there, by the process of expansion and contraction characteristic of metal joinery, and serious leakages will follow, to the injury of ceilings and paper whenever the snows of the ensuing winter cover the roofs with slush by melting—an unfortunate and costly penalty for misusing a flat house-roof. And obviously enough, it is useless to revert to the roof as a resort in wet weather, or in rain storm, when all shelter would be ineffectual and its gutters like brooks of running water. To mollify the discomforts of hot weather, I have heard it proposed to erect shelter tents upon the roof of the house to obviate the direct effects of the sunshine. Such persons, as a rule of sincere thought, have had little but an ideal conception of the efforts of direct sunshine in torrid weather on the canvas of a moderate sized tent. At the moment that the thought of an episode of tent life strikes the fancy, the spirit of the Indian enters the heart. But the movable teepees of Indian habitation are mere travesties of shelter-comfort as compared with houses standing upon foundations above ground. A hot sun beating upon a tent of ordinary dimensions quickly converts its inside into a smothering oven where it is easier to sweat than to comfortably breathe. Some experience in army existence on a sunny slope beyond the Capitol, Washington, D. C., in late July, with a regiment of men wilting into states of nausea and diarrhœa, put to speedy flight the writer's romance of tent life in hot weather. The little tent for children on the metal of the sizzling roof would mean the doctor on the third day, and possibly a funeral on the twelfth. The place for a tent is upon the ground, with a floor of wood—not upon the house-top, with the glare of the sun overhead and the radiation of hot steel on all sides. Furthermore, the glare of sunshine on a heated roof would manifestly prove so detrimental to the eye structure of children, unsuspecting and unguarded, that disordered eyesight would follow, and many visits to the oculist and expensive eyeglasses must follow also, to prevent premature degrees of blindness. Very few of the misfortunes of life are wholly spontaneous and uncomplicated with causative conditions.

Effect is as natural as the tendency of cause, and in cities children's eyesight calls for abnormal use of eyeglasses because of the abnormal abuses that disturb and distort the functions of the eyes.

Even were it not necessary to avoid the prevalence of fuel gases from chimney tops in proximity to most house roofs, the reasonable way to render a roof comfortably available for summer recreations would be to floor it with boards above the tin surface, and erect upon this flooring a shingle-covered shelter at least ten to fifteen feet high, and left unclosed on all sides. Very few tenants could ever expect the landlords to incur so much expense for so brief and interrupted a service, unless there was a recognized advance in rent rates. Very few owners of private property, indeed, would for an hour sincerely consider such outlay, unless the case was almost fancifully exceptional—one in five hundred instances. Hence the idea of roof resorts for family advantage may be considered injudicious and impracticable from the point of convenience and sanitary advantage. It would be more than a hundredfold better for families in congested districts of cities to abandon all ideas of resort to roofs for escape from the belting heat and closeness of narrow and unwholesome streets, by scattering out into the open country waysides, where the rents would be merely nominal, the garden and vegetable patch ample, hens and pigs the common products of the land, potatoes and beans all home-raised, and fresh air the unlimited, free gift of God. There is the exaltation of ozone and life; here is the drudgery and cramp of abnormal existence. The writer is no connoisseur of fables. He knows practically what he talks about. He has, in his early life, "grubbed" the saplings from the untilled soil, split the rails to construct the fence, plowed the ground to prepare it for the reception of seed, "cradled" the crop with the old-time means of reaping, and then threshed out the grain for family bread. He experienced a quality of happiness when doing this that the burdens of town life in more responsible spheres inadequately pay as reward. He knows of a farm in central Pennsylvania whose former owners have "passed over"; the land lies neglected, the broad acres are yielding themselves captive to briers; but these acres might be rendered remunerative if divided into a score of lots devoted to vegetables, to fruit trees and vineyards, and a score of families there to enjoy them. I know of a farm of sixty acres, with good dwelling and barn, with orchard and grazing fields, which rents for forty dollars a year—somewhat over three dollars per month—and the tenants making a neat living from the small industries they apply to cultivation. I also know of a country village where a retired gentleman resided in an excellent two-story house, porch front and back, large garden for strawberries and general vegetables, a prolific grapevine, various fruit trees, an acre of truck lot for corn and potatoes, whose rent was three dollars per month, net. His chickens furnished enough extra eggs to provide his home with butter and sugar, and the leavings of house produce fatted for him a fine pig each year for fresh pork and smoked meat. Half the people in the world don't know how comfortably the other half lives, because the former don't try the better way. Compare a situation like this with the struggle of the poor in overcrowded areas in cities, where drink and vice deepen the misery of relatively degraded existence—and the contrast of local situation and daily respect is like the lift from a miry morass to a hilltop of early sunrises.

The builders of cities never build wisely for the world, when small houses are so closely crowded together that the need of more space and more air physically suggests resort to roofs for alternative. God's earth is expansive enough to allow liberal space to surround each and every dwelling, in order practically to make them homes of generous civilization, rather than condensed dens of demoralizing conditions because of the absolute propinquity of all sorts, whereby the evil of a few too often extends its infections to all. A neighborhood usually becomes like what its houses invite. Hence the construction of tenement houses, for sanitary and moral reasons, should have in beneficent view the protective uplift of all future tenantry to planes of physical comfort and the guardianship of family seclusion. Even six feet of area on both sides of each dwelling, for people in plain circumstances, would, beyond estimate, add to the cultivation of superior habits and moral developments that ample breathing space naturally promotes. Besides the gift of health, it is as feasible for families to measure upward to the proportions of comfortable homes and attractive surroundings, as, on the other hand, it is a natural degeneration of morals that attends the down grade proportions of cramped and debasing class of habitations, where drink is resorted to by habit as an expedient for obtaining a lively sense of physical comfort, and where low ideals dovetail into contracted estimates of the royalties of human progress. Of all men, the man who builds the town should be equipped with elevation of purpose that cancels from his sight the per cent. of immediate graft, which schemes the packing together of a hundred dwellings upon an area of earth which could decently afford but half that number, when the interests of humanity are allowed to share the prospect. None but humanitarians should be allowed to plan for the homes of the indiscriminate class of working poor who start poor, stay poor, and usually die worse off. All the more elevating influences and possibilities of life are duplicated, yes, quadrupled by daily detachment from gross and degenerate home environments. I know too well a midway street within occasional earshot, where the fact of abiding is an equivalent of lowered ideals which affiliate with dominant estrangement from elevated circles of moral attainment. The transient occupants who traverse the long unkempt alleyway from back gates, or who cluster about their fastby front doorsteps, as though by unison of habit, fit themselves, not into abysmal constraints of squalor, but into passive assumptions of cheapened moral range, that resembles the type of residences in which they abide. Walk the way occasionally. There is the furtive carrier of the beer kettle. By chance the passion-storm of the wife beater. Anon the ear-lash of loud-voiced scolders. Repeats of ill-tempered women who uncouthly whip or slap screaming children. Where anon the burst of boisterous hilarity rolls like trumpet blasts. Situation where by the sheer gravity of unconscious imitation, or the vehemence of unrestricted initiation all do as Rome does.

We begin to comprehend that a genuine missionary work of humanitarian import awaits the grasp of high minded contractors and builders of homes for present and for future generations. Men of noble aims, whose sense of the application of capital and moral profits

will recognize the superior values of providing sufficient ground and air-space around each dwelling, to enable the better and higher ideals of tenants and purchasers to escape the cramp and smother that naturally pervert the home into an arena of domestic irritation, discontent and sorrow.

1726 North Twenty-second street.

SUCCESSFUL TREATMENT OF EMPYEMA.

BY J. E. MARSHALL, M.D.

GRUENBAUM has been successful recently in the treatment of chronic empyema by using the application of a negative pressure to the pleural cavity for several hours daily; the development of a negative pressure of 10 to 15 mm. Hg can be maintained by inexpensive apparatus, but in selecting the pump, remember that as there may be a slight leak at the chest wall, it is wise to choose a pump which will remove considerable quantities of air, and not one which is intended to produce a perfect vacuum. For this purpose, Fischer's filter pump is almost ideal, for the regulation of the negative pressure developed is easily carried out by altering the length of the tube used; this pump requires less than half a gallon an hour and gives but little trouble. Do not connect the pump direct with the empyema, for if anything should go with the pump, water would pass into the cavity; and if there is much discharge, the pump becomes dirty and does not act. A large bottle is placed between the pump and the chest, and this is partially filled with carbolic lotion; by placing the bottle on a higher level than the pump, even when the water is flowing extremely slow, respiratory movements do not lead to sufficient alteration in pressure to draw the water into it. A negative pressure of 80 mm. XG Hg. is used in adult cases, and this is accompanied by having a fall of about 2 meters. Gruenbaum advised one that would work without any attention at all; for this purpose a small exhaust pump of about 16 c. cm. capacity was run by a small electric motor; it is necessary to place a valve in the system to prevent too great a negative pressure. The arangement which was adopted consisted in connecting the pump with a large wide mouthed bottle, through the cork of which three tubes passed; one was connected with the pump, one with the chest, and the third was open above, but inside the bottle passed into a cylinder containing mercury. The depth of the mercury was over 15 cm.; the tube could be drawn up so that the distance of the end from the surface of the mercury could be adjusted with ease. The cylinder should be at least 2 centimeters in diameter, because air bubbling through mercury agitates it so greatly that if a small cylinder be used the mercury would be thrown out; and gauze should be tied over the top of the cylinder. The negative pressure depends on the depth of the opening of the tube below the surface of the mercury and efficiently prevents a dangerous exhaust. The treatment is painless; usually the pulse rate is slightly accelerated, but that may be due to the excitement of having the apparatus by the bedside, and the advantages which may be claimed for this treatment are: The negative pressure tends to expand the lung without necessarily causing empyema of the other lung, which may be expected from the use of James' bottles, and secondly, the negative pressure produces a hyperemia of the tissues of the pleural cavity, increasing their local resistance.

West in a Bradshaw Lecture, published in 1887, claims that the fact that the pleural cavity may be laid open and yet that collapse of the lung with consequent pneumothorax may not occur must be accepted, and the explanation sought. "When the lung does not contract after the pleura is open, it must be due to the cohesion between the two serous surfaces." He experimented with disks of wood, upon which were stretched stomach and other membranes, cohesions of which when wet and applied one to the other demonstrated that the lung will not let go its hold upon the pleura.

Thompson experimented upon a dog in the Loomis Laboratory, a medium-sized dog being selected and etherized; a very small opening was made into the pleural cavity with a knife. The lung was seen at once to collapse, and the collapse was in proportion to the size of the opening. When a small opening was made, the pleura pulmonaris receded from the pleura costalis but a little distance; violent coughing of the dog would again expand the lung, when the opening in the chest wall was small, but when the opening was made still larger and a small portion of a rib resected, the lung receded from the chest wall about two inches. The collapse of the lung took place equally over its entire external surface. When the opening was made larger than the trachea, the lung completely collapsed. A piece of glass was applied over the opening, and upon inspiration the lung was seen to fill with air. The glass being removed upon expiration, the air escaped through the opening from the trocacic cavity. As the effort of inspiration began, the glass was again applied and the lung rapidly filled with air, completely expanding after two or three inspiratory efforts; it was a question not of the cohesion of the pleural surfaces, but simply a mechanical question of pneumatic pressure. When a vacuum was produced beneath the lung by a removal of air, the lung rapidly expanded. When air was allowed to enter the pleural cavity freely through a large opening, an opening larger than the trachea, the lung did not expand even in convulsive coughing. When the hole in the thoracic wall was made smaller than the trachea, an effort of coughing would expand the lung, provided the air was allowed to escape through the thoracic opening; but if the window was not applied the lung remained collapsed, no air being pumped from the sound lung; the expansion of the collapsed lung was not due to the forcing of the air from the sound lung into the collapsed lung by any expiratory effort, but simply to pneumatic pressure produced by emptying the pleural cavity of its air. The glass was held over the opening. The dog revived. A similar opening was made upon the opposite side. That lung was allowed to collapse. The windows were removed from both openings; both lungs collapsed, the dog became pulseless, ceased to breathe, would have died, but when the windows were again applied, and the cavities emptied of their air, the lungs expanded again. Dwyer performed experiments to prove the theory of Smith and Frentzel that the collapsed lung expanded by air being forced into it from the sound lung. In the researches of the Loomis Laboratory No. 1 his experiments are recorded. "The sound lung being distended by a full inspiration, followed by spasmodic contraction of the respiratory muscles which condenses the

air, and its escape being prevented by a partial closure of the glottis, a portion of it is pumped into the collapsed lung. If these forcible expiratory movements be quickened in quick succession, the collapsed lung is not only expanded until it fills its cavity, but a portion may be driven through the opening in the chest wall." If the opening is much smaller in the thoracic wall than the trachea, and the coughing or forcible expiratory movements be quick, and the air allowed to leave the pleural cavity, the pumping movement, with or without the closed glottis, would naturally expand the lung. But if the opening in the chest wall is closed, whether it is small or large the lung will not expand until the air has been absorbed or expelled from the cavity. The lung immediately collapses in proportion to the size of the opening in the chest wall after the coughing ceases.

The proper classification of empyema and the establishing of a first principle to govern the treatment of all cases would be a distinct advance; before an abscess heals in any part of the body its cavity must be obliterated by the approximation of the two surfaces either by granulation and gradual contraction or by primary union. By use of antiseptic surgery, many abscess cavities are curetted thoroughly and their surfaces nicely approximated, the result being primary union and the obliteration of the abscess cavity. The abscess has not been cured by the draining and dressing, but by the cavity being put in a condition favorable for its obliteration. Nature now uninfluenced by the germs of infection or accumulating secretions, does her work waithfully and well. The first principle in the treatment of empyema is the obliteration of the abscess cavity by the approximation of the pleural surfaces. By the approximation and possible union of the pleural surfaces (a large percentage of subjects in the dissecting-room show adhesions of the pleura), remembering that every inch of lung expansion diminishes in that proportion the pus secreting surface. Empty the cavity of its contents at once to prevent the permanent collapse of the lung, and establish a perfect and adequate drainage. Thoroughly wash and disinfect it when the contents of the cavity are fœtid and the temperature remains high; empty the cavity of its air by constant aspiration with a valvular draining tube, or by any other means possible, only empty it. Abscesses in the soft parts collapse after emptying them, and thereby the surfaces are approximated. One of the boundaries of an empyema is a rigid chest wall, and the approximation of the pleural surfaces must take place by the soft parts advancing toward the chest wall by the expansion of the lung, but this process cannot take place if the cavity is filled with pus, serum or air; consequently, the abscess must be emptied not only of its fluid contents, but of the air also, as it prevents the expansion of the lung. The fluid can not all be withdrawn if the lung is incapable of expansion; air must be admitted as fluid discharges. But enough air should be withdrawn by constant aspiration to keep up, not an intermittent, but a constant pulling on the lung by the vacuum produced. When the lung ceases to expand and the condition of the patient will warrant it, the ribs may be resected and the chest wall pressed inward to obliterate the cavity. If the empyema is recent, the pluera is probably in a healthy condition, except where inflamed. If the abscess is small, and the condition of the patient indicates the subsidence of the acute inflammation, also in children, repeated aspirations might be resorted to as often as any accumulation of pus may take place. This will obliterate the cavity, and if adhesions form between the pleural surfaces a cure is effected. This manner of aspiration might be termed drainage by aspiration, and is the only manner in which it should be employed in empyema. If the pus is fœtid, at subsequent aspirations the cavity may be washed out with Condy's fluid.

Various devices have been perfected to help surgeons in their work on the thoracic wall; one of the latest is Sauerbruch's air chamber to avoid pneumothorax in intrathoracic operations.

In the pneumatic operating chamber invented by Sauerbruch, this operator has made a study of the inconveniences and dangers which attend artificial respiration, making it necessary to combat operative pneumothorax, he proposes a method, applicable to human beings, resting on the principle of the constant maintenance of the difference of physiological pressure between that which is exerted within the bronchial tubes and that which is exerted within the pleural cavity. He makes use of a chamber in which the physiological lowering of the intrapleural pressure is obtained by aspiration of the air. In experimenting upon animals the head of the animal remains outside the chamber and is separated from the latter by a rubber ball; and within this chamber extensive resections of the thorax can be made without causing serious trouble in the circulation or the respiration, for the operator and his assistants can stand the conditions within the chamber. He constructed a large and a small chamber, the former differing from the latter in that on the wall, opposite the side on which is the patient's head, is fitted a cylinder in which the abdomen and the lower limbs are introduced. This cylinder is hermetically closed at the level of the lower opening of the thorax communicating with the external air; in this way the normal pressure is maintained in the pulmonary veins, while the pleural aspiration is diminished. In a second method it was sought to obtain the difference in pressure, not by exerting less pressure upon the lungs, but by increasing the pressure within the lungs. This method resulted in producing troubles in the circulation and in the respiration which were not present in the first method; Sauberbruch observed that the hyperæmia which accompanies the collapse of the lung plays an important part in the pathology of pneumothorax. In his chamber are a large electric lamp, telephone and all the paraphernalia of an operating-room; the glass walls can be washed and disinfected while spectators outside can watch the proceedings. The door is double, with an air space between. A dog was operated on under chloroform, the thorax opened and the lung seen to be on a level with the long incision made in the sixth left interspace, respiration remaining even and tranquil. The upper third of the stomach was drawn up into the wound and the œsophagus severed, the cardial stump closed with purse string suture and the upper stump implanted in the stomach wall to the right of the cardia. During the entire operation the lung retained its normal aspect, size and relations. It was pushed out of the way under a compress like the intestine during a laparotomy. Toward the close of the operation one of the aids left the room and neglected to see that the inner door was closed air tight before he opened the outer door. The air rushed in, the lung col-

lapsed and the respiration became rapid and jerky, but it lasted but an instant, as the door was shut at once and the pneumatic pump worked a little faster to restore pre-existing conditions. Gradually the lung filled out and expanded again. As the pressure was increased to a trifle over the standard 10 mm. the lung ballooned out, protruding from the incision. The pump was regulated, the lung resumed its normal place and the operation was concluded. It had lasted an hour. There were six persons inside the air chamber during the entire proceeding; while it was warm they were able to breathe, feeling the pressure only when the door was opened and then only in the ears. The pressure of 10 mm. is equivalent to an altitude of 900 feet, and the pressure in the room was very slowly increased to this point, and as slowly restored to the ordinary pressure. The point that most impressed him in the whole experience was not the absence of pneumothorax so much as the permanence of the calm, regular, normal respiration of the animal, notwithstanding the extensive breach in his thorax. Under these conditions open both pleuræ and resect the sternum and ribs almost to the spine; in short, remove almost the whole of the "thoracic cage," without interfering with the calm regularity of the respiration. The clinical experience to date with the pneumatic chamber has been 10 operations on human subjects, with four recoveries. The subjects were all in desperate condition, enfeebled by the pathologic processes, which included gangrene of the lungs, stab wound of the heart and cancer of the œsophagus. The phenomena observed in animals were reproduced in the human subjects under deep narcosis.

Incision and drainage for the relief of simple serous effusion is a procedure so disproportionate to the gravity of the affection that its adoption is not usual; but exceptional instances occur in which the usual methods are ineffectual and some form of drastic treatment is needed. Suppuration within the pleura and a chronic thoracic fistula are likely consequences which most of us would be slow to invite. Before resorting to incision, in every case give a trial to the "artificial pneumothorax" method, which can be readily carried out as a simple modification of the ordinary paracentesis, the fluid being allowed to escape by siphonage, while sterilized air or nitrogen is admitted to replace it and the puncture carefully closed. It is not unlikely that in most cases sufficient stimulation would be set up in the pleural membrane to reverse the direction of its currents, and that the lung would re-expand as the gas became absorbed.

Etiology and pathology of empyema is readily being investigated, but it has not received any addition of first-rate importance, although Cestan's exhaustive work is a valuable contribution to the literature of empyema, both acute and chronic, in which bacteriological questions are duly considered, but chief stress is laid upon the subject of treatment and of operation. Senn's experience in Camp Thomas forms the basis of a general view of the practical aspects of the pathology and of the treatment of empyema. Fraenkel's pneumococcus and Friedlander's diplobacillus possess feeble intrinsic pyogenic property, and suppurative pleuritis set up during a pneumonia usually results from a secondary or mixed infection with pus microbes. Often it occurs at the time of the crisis or a few days later. Thus while the lung may get well the pleura may become infected, as though more susceptible than the pulmonary tissues to pyogenic infection. Senn attributes an etiological share in the production of pneumonia and pleurisy to dust, which renders the epithelial layer of the bronchi more permeable to the entrance of microbes. Senn favors a preliminary aspiration, a free incision, to be made under an anæsthetic, a slow evacuation of the chest, and tubular drainage without irrigation at first; he often resorts to free irrigation of the pleura during the subsequent treatment, and uses the double drain (the patient being made to lie on the sound side), the fluid escaping through the second tube as soon as the cavity is full. Resection of ribs as a primary procedure is losing some of its popularity; thus various observers, such as West, believe that it is often superfluous.

Andrews, in a paper on "Rib Resection in Empyema," insists that resection is too often performed and but rarely needed; he favors irrigation, and in its performance he has found Hancock's double empyema tube excellent. His own single flanged tube can be made to close the pleura air tight, and if the plug is introduced into it, after several expiratory efforts at the end of forced inspiration, the surface of the lung is kept under suctional influence for hours. Irrigation is another subject upon which opinions are still divided; there is no question that cases do exceedingly well without it, and in view of the serious complications with which it is sometimes attended, its use might wisely be restricted to cases with special indications. In a case of Janeway a man operated upon for sacculated empyema three and a half months previously, lost consciousness, after introducing a wineglassful of the peroxide of hydrogen injection for a second and became a pale greenish color; on recovery his right leg remained numb and powerless for twenty-five minutes. Three days later a similar attack occurred, in which he lost power in the neck, the head dropped, and there was serious embarrassment of breathing. Janeway favors the embolic theory and that the emboli are air or gas.

Valvular drainage tubes devised from time to time for empyema have not found favor with surgeons, who generally regard a free discharging outlet, kept aseptic, as the great indication. The analogous varieties suggested by Hutton and Baylor are excellent; in Baylor's apparatus a branch tube, kept habitually ligatured, enables the external portion of the tube and its terminal valve to be frequently flushed with hot boric acid solution. Baylor claims for his method an efficient drainage, a complete exclusion of air, and an inspiratory negative pressure not otherwise to be secured. Van Santvoord has devised an improvement upon Hutton's apparatus for empyema which has given good results in his hands. In one case the discharge ceased and the lung was fully expanded four days after the operation. Where empyema exists on both sides of the chest the question arises as to whether they should both be operated upon one sitting or at an interval of time. This point is discussed by Randall, who in one of his cases opened both empyemata at the same operation.

As to pneumothorax due to bacterium coli, the case reported by May and Gebhart was that of a laborer, aged 43 years, who had suffered from pleurisy and pericarditis after being stabbed. Pneumothorax de-

veloped and was aspirated. The gas withdrawn burned with a good flame, and was found to contain hydrogen, nitrogen and carbon dioxide. The production of gas was traced to the bacterium coli. Pyopneumothorax, Kienbock's X-ray observations on pyopneumothorax are interesting, in connection with the pulsations which were visible o the fluorescent screen. Some of the oscillations were synchronous with the heart beat, others were due to the shaking of the floor. The operative treatment of pneumothorax is seriously discussed by West in connection with a case of pyopneumothorax of several months' duration cured by free incision. When pus has collected in the pleura its removal is indicated. But the risk of inducing suppuration by incision and drainage, in a pleura which previously contained serous fluid only, is hardly justifiable before we have used the less severe method by simple evacuation of the fluid and its replacement by aseptic air or nitrogen.

In the use of the Rœntgen rays in the diagnosis of affections of the pleura, Bouchard and Claude found that the shadows of thickened pleural membranes are less dark than those due to fluid, but they are permanent; there may, however, be no means of distinguishing them from the opacity produced by pneumonic consolidations. The dense shadow of a fluid effusion, occupying the base, veils the diaphragm and merges into the darkness of the abdominal area. Its upper boundary is curved, or slants from the auxiliary line to the spine. From day to day the shadow of the common basic effusion or of the more central shadow of an encysted interlobar effusion varies considerably. In pneumothorax an abnormal transparency of the greater part of the air containing pleura, in which the collapsed lung alone casts a shadow, and a depression of the curve of the diaphragm. When a serous or purulent effusion accompanies the pneumothorax the opacity due to the fluid changes its position with each change in posture, always occupying the lower section.

The varying conditions associated with the pressure or the absence of an external wound or of an opening, which may be valvular or non-valvular, at the surface of the lung, are analyzed, and West points out that in pneumothorax the pressure conditions during inspiration and expiration require to be considered separately. (a) The Inspiratory Pressure. In the early stages as air enters the pleuria, the pressure is equal to that of the atmosphere on deep inspiration, and it tends to remain about equal with it. If it becomes permanently raised above that of the atmosphere the presence of fluid is indicated. (b) The Expiratory Pressure of pneumothorax is always positive in the early stages. The collapse of the lung is in great part due to the compression which this exercises, and the displacement of the mediastinum is also assisted, though not produced, in this way. (c) The Respiratory Oscillation is the difference between the inspiratory and the expiratory pressure. This tends to be reduced, since the affected pleura is in the position of maximum inspiratory distension, while, on the other side, for various reasons, including the reduced elasticity of the sound lung, the expiratory excursion is diminished. Thus the respiratory oscillation, as a whole, may be considerably below the normal. From a careful analysis of his observations, West is led to the conclusion that the intrapleural pressure in serous effusions are not so simple as they are thought to be, and that the whole subject requires a great deal of investigation. The respiratory oscillation is generally reduced in serous effusions and may be completely absent. The action of the lymphatic pump must greatly suffer in consequence. The intrapleural pressure in empyema is always positive and sometimes considerably raised, while the respiratory oscillation is practically absent; this high tension is an important fact. It points to the formation of abscess as a vital process independent of the simple laws of gravitation and of pressures which apply to the simple exudations.

THE NEWER SURGERY OF THE INTESTINES AND LIVER.

BY A. R. WILLIAMSON, M.D.

PART I.

IN injuries to the liver many good authorities now advise immediate laparotomy if symptoms of hæmorrhage into the peritoneal cavity develops; the sooner operation is performed the greater being the chances of recovery. If the blood apparently come from the liver, or a rupture of this viscus is discovered, the bleeding should be temporarily arrested by sponge pressure, or by pressure on the hepatic artery and portal vein, which can be done either by passing the hand underneath the inferior margin of the right lobe, placing the forefinger in the foramen of Winslow, the thumb in front of the lesser omentum, and applying pressure. Waring uses a compressor for the hepatic vessels; he applies it in this way: the blades are separated; the distal blade being placed in the foramen of Winslow, the proximal is put in front of the gastro hepatic omentum, and then the two are approximated until the circulation in the vessels is stopped. Waring has used this instrument on dogs and has found it does well, for it does not take up as much space as the hand and is more efficient. Now remove all blood clots, while any blood vessels which are visible on the surface of the wound should be picked up with forceps and ligatured with silk; then the pressure on the vessels may be relaxed to make sure that no large branch of the artery or vein has escaped observation; the margins of the rupture being brought into opposition and fixed by the insertion of a series of sutures; a fully curved Hagedorn's needle with a blunt point should be used; medium sized silk is the best suture material, as catgut is liable to slip; but be careful not to use too sharp a needle, for it may pierce the hepatic vessels. Insert the sutures about a third of an inch from the margin of the rupture, passing down through the liver tissue to the bottom of the wound and then through the liver tissue on the opposite side until it emerges at a point one-third of an inch beyond the other margin; these sutures should be inserted about a quarter of an inch apart and all should be inserted before any are tied; considerable care is required in tying the sutures, for they may cut through. For any slight hæmorrhage from the margins of the rupture or the suture apertures in the liver, a strip of aseptic gauze should be carefully packed over the bleeding part and one end brought out of the abdominal wound. Should it be impossible to bring the margins of the rupture together the vessels must be ligatured and the opening packed with aseptic gauze.

Ptosis of the liver is now attracting much attention; in this condition there is a sinking down or dropping of the liver in the abdominal cavity, for which "ptosis" is a better term than such others as "wandering," "movable," "floating," although "displacement," "dislocation," "prolapse," are allowable. As Spencer has shown, with or without displacement of the main mass of the liver there is a tongue-like projection downward of the right lobe, in front of the kidney toward the iliac fossa. This has been called the "floating," "appendicular," "linguiform," or "Reidel's" lobe. Hepatic ptosis was first noted by Cantani in 1865, but the chief knowledge of this and other visceral ptoses is due of course to Glénard. It is necessary to study the anatomy of this region to understand the condition; the liver is chiefly held in position by the vena cava and by intra abdominal tension, the ligaments appearing scarcely strong enough to support entirely so large an organ. The vena cava being the fixed point on which the organ rotates, it is the anterior edge which comes to point downward, while the upper or convex surface looks forward, and as the right lobe is heavier than the left, the former sinks, while the latter, on the left side of the vena cava, remains in position; not only is the right lobe tilted downward and forward, but its edge is also thinned out and prolonged at the expense of the rest of the lobe, undergoing a partial constriction by fibrous thickening of the visceral peritoneum in a transverse line so as to appear pedunculated. This condition is seen generally in women; out of the eighty cases collected by Glénard only seven were men, and it appears to be due to a general relaxation of the abdominal tissues. Treves does not consider that tight lacing of corsets a cause, as this constriction falls below the mass of the liver, and the furrows met with on the convex surface of the gland he holds, with Turner, to be congenital. In twenty-six out of Glénard's eighty cases there were evidences of liver disease, such as gall-stones, cirrhosis and hypertrophy, in one case cancer, in another hyatid cyst. Of the seven males, one had cirrhosis, a second hypertrophy from malaria, and a third enlargement with ascites from heart disease In fifty of the cases the liver seems to have been sound, but some of the patients had suffered from attacks of jaundice or colic. Glénard examines such cases by grasping the patient's loin with the left hand, while the right hand pushes up the intestines, thus the edge of the liver with the "floating lobe" is detected by the left thumb; a distended gall bladder and a floating kidney may co-exist, and the differential diagnosis is difficult to complete without an exploratory incision. The symptoms caused by hepatic ptosis are: dragging sensations, indigestion, or attacks of colic, jaundice from kinking of the bile duct; also others of a neurasthenic nature. The treatment generally advisable is a well-fitting belt, combined with the relief of dyspepsia, constipation and other nervous symptoms.

An incision in the right linea semilunaris is made and the liver fixed in position by about ten sutures passed deeply through its substance so as to unite it to the abdominal wall; at the same time gall-stones are removed. After operation, the patient should lie in bed for a month or six weeks, while more severe operations, such as the removal of the floating lobe, are not advised by Treves.

In hepatic suppuration, pain in the hepatic region after sudden movement or muscular effort brought on by succusion is the chief and significant sign; the accompanying fever is of no special type and may be absent. Malbot did not observe peritoneal friction, jaundice, pulsations of the liver, or hypertrophy, but deformity of the organ as the abscess bulges. Any depressing factor to the human economy is liable to produce hepatic suppuration; the diagnosis is completed by puncture; then a free incision should be made, and the liver pressed into the wound by the assistant compressing the patient's sides, for there are rarely adhesions. The cavity should be washed out, and several large drain tubes inserted. Manson's method is a much less severe operation and therefore more suitable for exhausted patients, consisting in finding the abscess by an aspirator, then passing in a trocar and cannula, withdrawing the trocar, passing a tube into the cavity through the cannula, withdrawing the cannula, and connecting a length of tube to the drain so as to obtain a siphon action. In cases where the abscess is near the surface and the patient in fair condition, a simple free incision, wiping out of pus sloughs and insertion of tubes or gauze is sufficient to produce a cure.

In gummatous hepatic tumors iodide of potassium is excellent. Robinson has described a case where a large gummatous mass had obstructed the common bile duct, while in another case a gummatous mass united the kidney to the liver; for seven years this patient had hæmaturia intermittently, so that seven years ago he was advised to have his bladder explored for a suspected villous tumor, but he refused and subsequently he had signs of chronic intestinal obstruction and wasting. Although there was absolutely no history of syphilis, after scraping out much of the gummatous sloughs, the administration of iodide of potassium led to the patient's temporary improvement.

Gall-stones in young children occur occasionally. We must remember this in cases of colic with screaming fits and drawing up the legs, as, of course, also of jaundice. Gall-stones are found in children dying of wasting diseases where probably inspissation of the bile and feeble muscular movements of the diaphragm dispose toward their formation. In some cases a gall-stone has formed behind a stricture of the common duct, of congenital or other origin. The possibility of a successful surgical operation exists in these cases, and therefore a timely diagnosis is vital. A marked case of sixteen years' standing was relieved by Treves, who did cholecystenterostomy on a girl of nineteen. Her history showed that for sixteen years she had been deeply jaundiced, had stools without bile, and the urine deeply bile stained. Her face was swollen, expressionless, resembling myxœdema, and her intelligence very imperfect. She was subject to severe febrile attacks with vomiting, dyspepsia and constipation. At the operation the common duct was found to end in a nodule, with marked distension of the biliary system behind. The symptoms gradually disappeared following the operation.

Radium is still expensive. One gramme (15 grains) costs in Paris $80,000. When to this is added the import duty of twenty-five per cent. the commercial value of one grain of radium in the United States exceeds $5,000.

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RAILROAD ACCIDENTS.

THE slaughter on American railroads is terrific and terrifying. In our happy go lucky way of running railroads not much regard is paid to protection of human lives if it interferes with economy of management. This statement applies with much more force to Western railroads, but the Eastern lines have by no means gotten the beam out of their own eyes.

It was said in jest a few years ago that the only way to obtain safety on the railroads would be to tie a director to the cowcatcher of each train. This statement made in jest possesses far too much of grim truth in it to be pleasant. Railroads are straining every nerve to increase their earnings and any economy which reduces running expenses is allowed. If the companies were compelled to pay enormous sums for each life sacrificed on their roads, these accidents would largely cease.

It is possible now to speak intelligently of these deaths and their causes, for by the law of March 3, 1901, each road is compelled to send to the Interstate Commerce Commission at its office in Washington a monthly report, under oath, of all collisions of trains or where any train leaves the track and all accidents occurring to passengers or employees. They must also give the causes of each accident and the surrounding circumstances under a penalty of one hundred dollars a day as long as they fail to comply after the time specified. The roads are protected by the fact that such reports cannot be used as evidence against them.

In pursuance with this law the Interstate Commerce Commission has just issued "Accident Bulletin No. 19," which contains an account of the accidents occurring in January, February and March of this year. According to this report, 274 people were killed and 3,969 were injured in this period in train accidents. But taking accidents of other kinds there were 1,126 killed and 17,170 injured in three months' time.

Surely a business that kills four hundred people a month and injures nearly 6,000, or two hundred a day, demands some attention from our governing authorities. We read with horror of the "General Slocum" disaster where a thousand people die at once, but because their deaths are spread over a longer period, we note this information as interesting and speedily forget it.

It must be remembered that these accidents are serious affairs, for no slight injuries are reported. If the employee can work three days in the ten following the accident, his case is not reported to the commission.

Taking up the question of passengers in this period, forty-six were kiled in collisions and nine hundred and thirty-nine injured. The commission also classes as passengers men carried under contract, as postal clerks, express messengers and Pullman employees, but these are not included in the forty-six mentioned. Of this latter class ten were killed and one hundred and eight hurt, making a total of fifty-six killed and a thousand and forty-seven hurt. In the same period, eighty-five trainmen were killed in collision and seven hundred and fifty-five hurt, which, considering the relation of trainmen to passengers, is a very heavy percentage. Derailments killed five passengers and forty-one trainmen and hurt seven hundred passengers and three hundred and sixty-five trainmen.

When it comes to work around trains, handling dynamite in comparison seems a very trifling occupation. Forty-three trainmen were killed this way and four hundred and sixty were hurt. Doing "other work" about trains took forty-one trainmen to their final reward and put twenty-six hundred and ninety-four in their beds. Surely such work should not be allowed to be so dangerous.

The other details grow grewsome and monotonous; thirty-one passengers were killed getting on or off of cars, while one hundred and fourteen trainmen so died, and twelve hundred were hurt. The Interstate Commerce Commission does not include in these tables the "yard trainmen" or other employees, but they make a very respectable mortality by themselves. Thus forty-one hundred and sixteen men are hurt "tending switches," etc., and forty-six are killed.

The Interstate Commerce Commission states that "many of the present totals are smaller than those in the corresponding columns three months ago, but this is a comparison that affords scant ground for congratulation." They report the details of the worst accidents, showing that gross carelessness is permitted by the companies. Thus collision No. 29, which caused thirty-four deaths and twenty-four injuries, was due to the fact that a telegraph operator, who had been on duty all day and more than half the night at a lonely station, fell asleep. On awakening he misinformed the train despatcher as to what had occurred while he slept. There were no rules to govern his case and any time an overworked operator

falls asleep on this line, this accident is likely to recur. In this particular case the operator had been on duty nineteen consecutive hours. Heaven alone knows how many more hours he would have been on duty if death had not released him.

Again there were disagreements or misunderstandings between employees; thus in one case the conductor failed to arrange for protection; at the same time the flagman mismanaged; the engineer forgot to test his air brakes and the block signal operator gave a false clear signal. Surely there was something rotten in the state of Denmark here. Again the engineer was asleep or overlooked orders, or the conductor forgot schedules or neglected to identify trains, and so on the wretched history runs. As to derailments, matters are even worse; thus spreading rails, broken frogs and rails, wornout rails and tires on driving wheels, etc., are all to blame, showing carelessness or neglect on the part of the management.

The commission makes no comments on these causes and cases beyond mildly suggesting that "the government should investigate the disastrous collisions and derailments and set forth in unmistakable terms their causes and remedies." Surely this is a lame and impotent conclusion. Again as with the insurance companies, railroads are niggardly with their surgeons. At a recent accident on the Pennsylvania Railroad at Paoli, Pa., where seven men were killed while sitting quietly in their train at the station waiting for it to start, the company did not have a physician between Philadelphia and Harrisburg available to send and sent out the command, "Call in the local doctors," to which behest the local doctors responded promptly, yet were never reimbursed for their work of caring for the injured.

If the Pennsylvania Railroad, which is regarded as the standard, is so niggardly, what of the other lines?

We hold human life too cheap in this country; we read with no sense of responsibility of these railroad accidents and thank our good fortune that we escaped, but this is a problem which should interest even the most selfish individual, for he will never know when he stands in its shadow. This slaughter is of to-day. It did not occur in ancient Rome or in the Middle Ages, but it is going on now at the present moment.

Physicians in Public Life.—The *Jour. A. M. A.* states that the authorities of Baden in Germany are considering the organization of a council comprising physicians, dentists, veterinarians and druggists. This organization will deal with matters affecting the profession and the public health in general. Membership in the medical chambers in Germany is compulsory on the physicians in a district where one exists. The new organization is planned along the same lines, only it will embrace the allied branches. It were well if our fraternity in this country took a little more interest in the body politic.

EXPERT TESTIMONY.

EVERYONE will recall the case of a man named Tighe, which was recently ventilated in this community. This man was asserted to have been wrongfully declared insane by several alienists of very high standing. No one, of course, imputed to these eminent men anything else than possible errors in judgment such as may occur in any department of medicine, but particularly in its most difficult branch, that of psychiatry. However, the result was to bring up again a discussion of the whole vexed question of medical expert testimony. Perhaps all the phases of this question are familiar to our readers. We have ourselves distinctly presented them (January, 1904). We would here emphasize but one of these phases—that of the manner in which many of these trials are proceeded with.

In the first place, it is an exceedingly difficult thing, in any given case, to reach the truth, the whole truth, and nothing but the truth. That is what the judge, the jury and the lawyers (all of them officers of the court) are engaged, by their solemn oaths, to ascertain. That most judges seek this end, no one doubts; that the jury generally try to fulfil this obligation, is equally in evidence; how often the lawyers seek to further this simple object, let those who read the lay papers and who know anything about court proceedings, conclude as they think best. The court clerk with perfunctory monotony, administers to each witness, expert or otherwise, the above-stated formula.

Yet with what zeal is the truth, the whole truth and nothing but the truth sought. Tom Reed, of blessed memory, has well said that the simple, plain truth is the rarest thing in God's universe; there is on the other hand, nothing quite so common as part-truth—nor we would add, nothing so misleading. The lawyer, from the very start, impresses upon the expert, whom he engages, that he is a partisan, that everything short of absolute iniquity that can be done, must be done to save the case for which he is retained. When the expert is put upon the stand his lawyer shows his dexterity in bringing out statements helpful to his client, in suppressing such as would hurt his client. When he cross-examines the expert of the opposite side, he seeks by ridicule, by invective, by inuendo, to belittle harmful facts, to distort the spoken truth, to suppress the half truths. Oftentimes the lawyers, quite without rebuke from the bench, descend to puerile blackguardism. Reader, if you think this is too strong a term, consult Mr. Wellman's book on Evidence. The judge, either does not or cannot, to any measurable degree, bring a decent order out of the chaos into which the case becomes plunged. The jury is consequently befuddled.

And the most unjust and the most ridiculous as-

pect of the whole proceeding is that only upon the medical expert witness, and no one else, is any blame laid.

A VACATION CITY.

IT is refreshing to come upon any ideas tending to the physical betterment of the race. Time was, and that not so long ago, when factory hands and like workers had no thought of vacation-time, but were at labor (except when they were on strike) six days in the week, throughout the year. Now, however, the wholesome custom is gaining place by which all workers, of whatever degree, may have surcease for a little while during the heated term. For instance, three thousand factory hands employed at Dayton, O., camped in August last on the shores of Lake Michigan. This was a cooperative camp, arranged and managed by the Men's Welfare League. Each chapter of this League got a ten days' outing for the cost of one week's board; and the contract was that the picnickers were to be carried 200 miles from Dayton to the camp, and back home again, to have tents and cots furnished them, and three meals a day during the whole time in camp—all for $5.75 per individual.

This excellent institution was first organized in the factory of a cash register company; and its object was "the betterment of working conditions in Dayton and elsewhere, and the securing of civic and educational improvements in our home city." And it was believed that one of the best means to this end was to improve the conditions of working people by giving them yearly vacations. And no one would doubt that this object was being fulfilled who saw "the happy campers resting beside their shaded tents, bathing in the cool surf of Lake Michigan, playing outdoor games, and dancing to the music of the League's band on a big open-air platform."

It were well, indeed, if this plan could be duplicated in every city and town in our country. The bodies of these good people would thus become revivified and strengthened to endure the hardships of the year. There would be less sickness and distress; and consequently much greater contentment and enjoyment of life. Perhaps by this means would strikes become a thing of the past; and walking delegates an unpleasant memory.

Preserved in Alcohol.—The French village of Chailly is recorded to be the heaviest consumer of alcoholic liquids in proportion of any village in France. It is also a fact, states the *American Wine Press*, that this little hamlet contains the largest number of octogenarians.

NEW YORK CITY'S GARBAGE.

THE question of the disposition of the garbage which accumulates in and about the metropolis is as difficult to deal with as it is unpleasant to discuss. But one definite conclusion has been reached by all concerned—that the present method of disposal is the very worst conceivable. Because of the destruction by fire of the Barren Island plant, the city has resumed the disreputable practice of dumping its garbage at sea, with the result that fauna and flora of the greatest variety and picturesqueness now adorn the beaches of Long Island and New Jersey. All this is in very truth most unhygienic and disgusting; and a condition of things which no European community would endure for a moment.

The best methods of treating garbage and refuse are by burning and the commercial utilization of the heat and residium. The incineration should be complete, so that "malodorous reek" shall not result; and the result should be power, such as Commissioner Woodbury converted into the electricity by means of which the Williamsburg Bridge is now lighted.

The *Evening Post* suggests the appointment of a special commission to deal with this matter, which involves so largely the health and decency of New York City, with that of adjacent communities extending many miles up and down the coast. Such a commission would find the city giving away (through the picking privilege) and throwing away (by the dumping of ashes) the fuel that would burn all of its garbage and light all of its streets. As it is now, however, the city is polluting its own waters, and distributing nasty rubbish upon its seaside pleasure grounds. There is here a dreadful lack of simple business capacity. The problem, however, is well within the scope of modern sanitary engineering; and a satisfactory solution might be hoped for if the city would but betake itself to competent advisers.

TO OPERATE UPON MENTAL DEFECTIVES.

IN a paper on *The Sterilization of Certain Mental Degenerates,* read before the Section of Psychology at the recent meeting of the British Medical Association in Toronto, Dr. Robert R. Reutoul, of Liverpool, presented a number of arguments calculated to justify the course he proposed; some of these we consider here.

Reutoul presents statistics from various sources, giving conclusions as various. In one table the proportion of insane to the right-minded is one to 657; in another one to fifty; and between these all sorts of proportions are stated.

Evidently these statistics, as is so often the case, depend upon definition, the industry and conscience of the compiler, and other indefinite and uncertain factors. Besides, the question of statistics always depends largely upon the point of view. Only the other day a celebrated alienist expressed, in a respectable publication, the opinion that we are all of us more or less insane. In any event it may fairly be agreed that the proportion of the insane, or at any rate of the feeble minded, in any community is very large.

Now, Dr. Reutoul would "sterilize" those manifestly defective in mental make-up, in order that they may not transmit their stigmata to an innocent and unoffending posterity. He would not mutilate anybody. What he would do is this: In the female he would excise and ligature parts of the fallopian tubes. In the male degenerate he proposes one of two operations. He would either excise and ligature parts of the nasa deferentia (vasectomy); or he would follow the same course with regard to the spermatic cords (spermectomy). Experiments upon animals have shown that when the vasa deferentia have been divided and ligatured, the testes do not atrophy; and there are sexual desire and power, but no ability to procreate. After spermectomy there is no sexual desire, or potency, or power to impregnate. To the latter operation Reutoul would subject lunatics, epileptics, idiots, confirmed criminals and inebriates and habitual vagrants.

But, in order to perform these operations, the surgeon would, in every law abiding community, have to receive the sanction of the authorities. In England Reutoul would empower the Lunacy Commissioners to act. But every one will surely see that to empower any official body with regard to such proceedings would be a most dangerous matter, for many reasons; it were superfluous to give space to an amplification of this statement.

A COUNTY BACTERIOLOGIST.

ONTARIO County, New York, has recently secured the necessary legislation to appoint a county bacteriologist, at a salary of fifteen hundred dollars. Under the supervision of the health officers, the services of the bacteriologist will be free to all physicians of the county.

So far as we are aware, this is the first instance of the institution of a bacteriologist by a county, in the state, and, probably, in the whole country, excepting in a few instances in which a county is legally or practically a city. Ontario County can, therefore, take considerable pride in having established a wise precedent. Ontario County has a population of 50,000, about the average for the counties of New York, outside of those containing cities of considerable size. Ontario County has one city, Geneva, of about 11,000 inhabitants, the next most important town being Canandaigua, an old and historic village of about 6,500 inhabitants. Aside from several villages and hamlets, it is a farming community.

We mention these statistics as significant. The securing of a bacteriologist was in no sense a political job, and, indeed, the incumbent is selected on account of professional fitness, from a distant place. The salary paid, though not perhaps adequate from the professional standpoint, is as high as that paid by all but the largest municipalities and best endowed colleges, and compares favorably with salaries paid by local governments for clinical and executive services by medical men. The expense, though less than five cents per capita per annum, inclusive of laboratory expenses, is still a considerable single item in the tax budget for a small county. We are informed that the appropriation was obtained without difficulty and solely on the merits of the case, although the fact that special legislation was necessary would have afforded an easy excuse for delay and obstruction on the part of the supervisors. We have known of large and wealthy cities, in which similar projects have been blocked for political motives under the plea of economy.

Altogether, it is instructive and gratifying to find a community in which the influence of the medical profession is so great and in which the public sentiment, representative of a population largely agricultural and not of great wealth, is so far sighted. Speaking broadly, this precedent for the United States has been established by the country physician and by the farmer, although the terms do not apply to all, either of the profession or of the laity.

THE RIGHT AND THE LEFT LIVER.

DR. H. SEREGE, of Vichy, contributes to the *Revue des Maladies de la Nutrition,* March, 1906, a rather extensive article on the distinction of function of the right and the left liver. The conception of this functional independence dates back to Glenard in 1890, but Serege claims to have presented the first scientific demonstration to the *Journal de Medicine de Bordeaux* in April, 1901. The gist of the whole matter is the claim that the blood in the portal trunk is not thoroughly intermingled, but that the blood from the splenic and inferior mesenteric veins, with that of some small branches mainly from the stomach enters the left liver, whereas that from the superior mesenteric vein enters the right liver. The division into right and left liver, following the distribution of the main divisions of the portal trunk, is traced along the biliary fissure to the point

of discharge of the hepatic veins into the vena cava. Thus, right liver includes right lobe and lobus spigelii; left liver left lobe and lobus quadratus. The lobus caudatus is not mentioned, but apparently belongs with the right liver.

Into the right liver drains the blood from the small intestine, rich in nutriment and comparatively free from toxic matters; into the left liver drains the blood from the stomach, spleen and colon and rectum, relatively poor in nutriment and rich in toxins, including exogenic injurious substances for the stomach or even, occasionally, gross poisons.

Silvestri (*Gaz. degli Osp.*, 1905) confirmed Serege's experiments that aniline dyes followed the vascular routes described, and Pincherle, of Bologne, in a monograph published the same year, found that cellular necrosis located in the liver in similar relation to the application of phosphorus to the ailmentary canal, between ligatures. Milne Edwards, Carl Vogt and Yung in their comparative anatomies, describe a complete independence of portal and biliary channels for the right and left portions of the liver of pigeons and some other birds. Brissaud and Dopter claim that the lobules of the left liver are much smaller and more numerous in a given area than those of the right in man.

The veins draining the liver enter the vena cava at different angles, the right at an acute angel, the left at nearly a right angle (75—110 degrees) so that the circulation in the latter is physiologically impeded. Soulé and the author found that potassium ferrocyanid passed through the right liver in 45 seconds, through the left in 95 seconds. The importance of a relatively long sojourn of blood containing toxic matters, is obvious. Silvestri has also corroborated the author's statement that, owing largely to this delay of the circulation, glycogen is present in greater abundance after the period of intestinal digestion, in the left than in the right liver.

This conception of a distinct division in the physiology of the liver may be characterized as important if true. It must be conceded both by the claimants and by their critics that the division cannot be absolute. An exact anatomic line cannot be drawn between the areas of venous drainage and supply, indeed very free anastomoses exist. Some intermingling of liquid or semi-liquid contents in any container is inevitable. Thus, on the one hand, a sharp contrast cannot be made between the nature of the substances liable to be carried to the liver (or livers) from the respective drainage areas of the splenic and inferior mesenteric veins and of the superior mesenteric veins; and, on the other hand, even if this sharp contrast were possible, some mixture in the portal trunk would be inevitable. Solid particles, as of aniline dyes, would be much more likely to follow lines of current without crossing over, than would ordinary liquid ingredients.

The mere fact that notable quantities of glycogen are found in all parts of the liver under the same circumstances and that both right and left portions contribute to the formation of bile, as also the newness of the discoveries of important histologic differences between these two portions, are against the theory. The only instance in physiology of a practical distinction in currents without a demarcation by walls, is found in the circulation through the fœtal heart. Here, the blood moves under quite strong pressure and is guided so that the distinct currents retain the impetus with which they leave the nozzles of vessels. Even with these factors, considerable mixture occurs. In the portal vein, the mechanic conditions are very different: the stream is comparatively slow and there is no special provision in the way of valves, or direction of currents, to prevent intermingling. The conditions, indeed, are approximately what occur in a river formed by the union of two principal and a few small tributaries, and soon branching again, as about an island. Here, however, the question of absolute dimensions is important. Two streams of water joining, may preserve their characteristics of color for many miles, but if we reduce the streams to a fraction of a centimeter, there is not a corresponding diminution of the strip of mixture. In several instances, we have analogies for the results of the experiments with aniline emboli. Inspired foreign bodies tend to enter the left bronchus, cerebral embolism is usually right-sided, septic involvement of the liver after dysentery is usually right-sided (contrary to what should be the case if dysentery is essentially a colitis and if Segere's theory is correct) and yet, in the former cases there is no corresponding physiologic distinction as to air and blood entering the respective areas of supply.

Segere quotes Glenard as claiming a distinct right and left pathologic reaction in the liver, corresponding to conditions in the two portal areas. As we recall Glenard's writings on this subject, he does not go so far as a clinician, as would be necessary to give support to Segere's claims and yet, he goes farther in the description of notable pathologic differences according to portion of liver affected by the portal circulation, than do most authors. The subject is interesting and deserves further study, but we can scarcely regard the bilateral hepatic theory except with scepticism.

Japan had 35,685 doctors in 1904; yet, states the facetious *Sun*, the population of the empire is steadily increasing.

BIBLIOGRAPHICAL

American Practice of Surgery. A complete System of the Science and Art of Surgery. By representative surgeons of the United States and Canada. Editors, Joseph D. Bryant, M.D., and Albert H. Buck, M.D., of New York. Complete in eight volumes. Profusely illustrated. Volume I. Royal octavo, 818 pages. Price, muslin, $7; leather, 8; extra half-levant morocco, $9. Sold only by subscription. New York: William Wood & Company.

The publishers of this gigantic undertaking say in their announcement that:

"Although other attempts have been made in recent years to publish a book which should faithfully record the part taken by Americans in advancing the science and art of surgery, and which should give an authoritative picture of surgical practice as it is carried on today by the recognized masters of the art, time has shown, as it seems to us, that all these efforts were made somewhat prematurely. It is our present belief that only within the last two or three years has the practice of surgery in this country reached such a mature stage of development that one might reasonably expect to secure for the contemplated book the desired character of authoritativeness, and also might anticipate that this character would possess some degree of permanence. It is with these ideas in mind that we have decided to undertake the publication of the "American Practice of Surgery;" and, as the first step, we have commissioned Dr. Joseph D. Bryant and Dr. Albert H. Buck, of this city, to act as the editors of this important treatise. These gentlemen are so well known to the profession at large—the one as a teacher and author in surgery of established repute, the other as an editor of wide experience—that we do not need to say anything further in regard to their fitness to be at the head of an enterprise of this nature. A survey of the list of writers whom they have invited to contribute the articles of which this great work is to be composed, affords convincing evidence that the men selected are among the very best to whom such responsible tasks could be entrusted.

"We have had the present scheme under consideration for several years and have become more and more convinced, as the time for carrying it into effect approached, that it would not be practicable to cover the entire range of surgery, in a fairly thorough fashion, within the limits of a series of only five or six volumes of the usual cyclopædic form. After very careful consideration, and with the full approval of the editors, we have decided to publish the work in eight royal octavo volumes; a total of more than six thousand pages. Within these limits we believe that it will be possible for our contributors to set forth the results of their extensive experience with such wealth of detail as to render the new "Surgery" simply indispensable to their less experienced professional brethren; and in these days of specialized work the most experienced surgeons must recognize the fact that even they are at times in need of additional information in many fields of surgical work.

"The material contained in 'American Practice of Surgery' will be entirely original, written for this work alone, and naturally embracing much that has never before been published.

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"Illustrations in medical works are of the greatest possible assistance when wisely employed to elucidate the author's meaning, and we propose to introduce them liberally in this work. As regards execution and value they will be of the highest character.

"The work will be printed from plates made from specially cast type, and printed upon paper of a quality to combine perfect press-work with ease in reading."

The first volume of this royal work is now before us and it fully bears out the promises of the publishers.

The introduction upon "The Evolution of American Surgery," is from the pen of the veteran surgeon, Dr. Stephen Smith, and no better selection for this duty could possibly have been made.

The articles are all ably written by specialists in the particular lines. The illustrations are excellent, the type is of good size for easy reading, and the paper is heavy and durable.

We may truthfully say that the work, in our opinion, is perfect in every particular, and it will certainly find its way into the library of every surgeon at least.

A Non-Surgical Treatise On Diseases of the Prostate Gland and Adnexa. By George Whitfield Overall, A.B., M.D. Third edition. 12mo, 238 pages. Chicago: Rowe Publishing Co., 1906.

The great demand for this little book shows that it fills a want of the general practitioner, to whom we commend it.

The present edition contains much new matter, including three new methods of treatment which have not previously appeared in print. There is an illustration of a new, simple and inexpensive instrument, which will supply the place of the endoscope in many cases, and will be found of practical use. The subject of which it treats is important, and worthy of all the non-surgical treatment that can be devised.

Before and After Surgical Operations. A Treatise on the preparations for, and the care of the patient after operations. Including Homœopathic Therapeutics. Written with special reference to the needs of the general practitioner and the hospital interne. By Dean T. Smith, B.Sc., M.D., professor of surgery and clinical surgery, University of Michigan, homœopathic department, Ann Arbor. 260 pages. Cloth, $1.25 net. Postage, 8 cents. Philadelphia: Boericke & Tafel, 1906.

The title of this little book sufficiently explains its province, and it will be found useful by those for whom it was written.

Science is declared by Huxley to be nothing but trained and organized common sense, differing from the latter only as a veteran may differ from a raw recruit. "The vast results obtained by Science are won by no mystical faculties, by no mental processes other than those which are practiced by every one of us in the humblest and meanest affairs of life. The man of science, in fact, simply uses with scrupulous exactness the methods which we all, habitually and at every moment, use carelessly."

CORRESPONDENCE

MEDICAL ERRORS AND ABUSES.

To the Editor of THE MEDICAL TIMES:

Every doctor will admit that there are plenty of errors and abuses in the practice of medicine. But each of them will make the admission with more or less of a mental reservation having reference to the mistakes of "the other fellow." It seriously becomes us, as representatives of a learned profession, to "face the music"—to "take our medicine," to "whack up" in the contest for truth. Let us lay our hearts in touch, and each look his conscience in its face. It is unworthy of the ethically legitimate physician to shy at unpleasant truths because of their accusing relation to himself. If we only *could* banish that partisanism (essentially wrong) which constrains us to defend a proposition more for its *own* sake than for truth's sake! Of course I am "in the same boat" with the rest, and I realize that I am much more fallible than many who will read this article. What then? It simply devolves on him to show me *my* errors. That is the only way there is of getting at what we are all seeking—THE *truth.*

I want to submit, for your fair consideration, a scheme which, as I sincerely believe, embraces every fact of therapeutic philosophy. It is scarcely necessary for me to say, in this connection, that if there is no therapeutic philosophy, we would better quit the practice of medicine and go to doing something useful—say, sawing wood. A science, to be such, must be based on axioms and definitions. This will not be disputed. Science is at least the valet of philosophy, and if therapeutics is a science, there is a philosophy of medicine.

I shall submit herewith three propositions which, I insist, are axioms. They underlie every conceivable phase of therapeutics. They *are* axioms, because all practical tests respond to and reciprocate with them. Here is AXIOM 1st:

The right drug, given in the right quantity, to the right patient, at the right time, makes for cure.

No drug-using doctor will dispute the axiomship of that proposition. It's axiomship will be disputed only by drug nihilists, and to such this axiom will not appeal, of course.

AXIOM 2d:

Food is food, and drugs are drugs.

The mere phraseology of this proposition certifies to its axiomship. Yet this is *practically* denied by nearly all doctors. The difference between a food and a drug is this: a food is assimilated, a drug is not assimilated. True, there are foods that contain drug elements, which, when ingested, are capable of isolating themselves. There is a diuretic principle in asparagus, for instance, which, as a drug, performs its office, and is eliminated. This principle is a drug, and therefore is not assimilated. Only that which adds itself to the tissues is food. It is easily seen that there is a strict line of demarkation between a food and a drug. They cannot at once be *different* and the *same.* Assuredly, the axiomship of the proposition—a food is a food and a drug is a drug—stands.

This axiom inexorably "cuts out" the tissue-food fallacy. There is no *direct* way under heaven of feeding a tissue. If you would feed a tissue, you must do it *indirectly,* through the ingestion of assimilable material, *i.e., food.* Schuessler was *wholly* right, or *wholly* wrong—he could not have been *partly* right. Of course he was wholly wrong; but, from an inherited method of thought, the great mass of the profession tacitly affirm that the "biochemic" system is *partly* right. Therefore they continue, as of old, to give iron in anemia, lime in rickets, phosphorus in neurasthenia, etc. The practical fact that not one of these drugs given for these conditions was ever known to do any good has made no difference. The force of orthodox conservatism is more than a match for a new truth. True, it does not override new truth forever, but—*nearly.*

Every doctor who gives iron in anemia is practising Schuesslerism—he is confessing that the "biochemic" system is wholly right, and is therefore the *only* true system of medicine. Dear doctor, I submit that this conclusion is logically inescapable.

Even if there were such a thing as idiopathic anemia—and it is about certain that there is not—to give iron for it is to attempt *direct* tissue feeding. But anemia is only a symptom. It is so recognized by all intelligent physicians. To give iron for this symptom is pure symptom-whackery—it is antipodal to causal treatment. The iron electors have lost their function, and refuse to take up the ferruginous element. See the *irony* of this iron mania—the usual doctor necessarily reasons this way, if he reasons at all in the case: "I see that her system is incapable of taking up iron, therefore I shall give her—*iron.*" Dear doctor, am I putting it too severely? I think not, for it is impossible to hit the right nail on the head too hard. Iron has been the crux of the ages. Why? Because the zealous iron enthusiast never *could,* and never did, force it to be assimilated—it refused to play the role of *food.* It persisted in remaining a chemical astringent—that and nothing more. What quantities of brain vapor have been wasted in attempts to synthetize chemical iron into nature's food iron! Suppose some ambitious biochemist had succeeded in duplicating nature's food-combination of iron, *what would he have done with it?* What excuse would it have had for existence, since all our foods contain enough of iron, and to spare? Don't you see the foolishness of it all? I have discussed iron because it is the "boss" tissue food. What is true of iron, is true of all the "tissue foods."

I am perfectly aware that this screed, as many will designate it, will collide "head-on" with the fixed prejudice of a large majority of my medical brethren. Simply, I can't help it. What I have given you is philosophy, not mere theory. This philosophy is justified by the *practical* outcome of thousands of experiments which I have made within the last twenty years. It is due many manufacturers to say that a number of iron preparations on the market are good and reliable medicines, but they are good in *spite* of their iron content. If they will eliminate the iron element of their mixtures, they will improve them twenty-five per cent. at least. All manufacturing pharmacists are too shrewd to offer the profession any form of isolate, *straight* iron. They seem to actually know that it is the ingredients *associated* with the iron that do the curing. Separate the other elements from the iron of the old tincture of the muriate of iron, try the naked iron, and see what results you get from the iron! You will get *nothing* but *astringence.* I have tested

it scores of times. Iron is a good chemical "backstop;" that is true, but can this fact justify the use of a drug which is so disagreeable and injurious?

The third proposition which I insist is an axiom is this:

What will make a well man sick will make a sick man sicker.

It seems incredible that any sane man will question the truth of this proposition, but it is a fact that many doctors do so. Because a drug may cure a specific sickness, they hastily infer that it cannot for a greater or less time, add to the sum of the patient's distress. Pathology is only perverted physiology, and the fact of sickness does not disturb the fact of vital responsiveness. John Brown sick, is still John Brown. If ipecac will nauseate him in health, it will nauseate him in sickness. Otherwise, the ipecac would not be true to itself, and the animal organism would not be true to itself. Quinine will cinchonize a well man; who shall deny that it will cinchonize the sick man? Is not cinchonism added to the sick man's other distresses? Looking at the question from any point of view, it will be seen that the axiomship of the proposition is incontestable. It is merely a verification of the old truism—"Drugs are double-edged tools." It being true that what will make a well man sick will make a sick man sicker, see what a weight of responsibility rests on the physician! If it is highly exceptional to give the *right* drug—which while it is doing 7 of good is doing 3 of bad—how shall we estimate the harm the wrong drug does? Is it any wonder that some of the brainiest physicians we ever had—with Holmes at the head—have been drug nihilists? The trouble with a majority of drug givers is that their *drug* habit of thought leads them too far away from nature. They lose sight of that most momentous fact, *physiological optimism,* and centre almost their whole trust in drugs. I offer here an enunciation which is *all but* true: *The physician's clinical success is inversely as the square of his faith in drugs.* Who shall deny that the best doctor is the best hygienist? *Knowing* these facts, as most physicians do, why will they persist in hypermedication? Dear doctor, don't shove it onto the shoulders of "the other fellow"—severely inspect yourself, and then square your clinical method with that of the *vis medicatrix naturæ.* If you are positive that antitoxin either positively or relatively increases the number of phagocytes, then use it. This merely illustrates my meaning. In our extreme devotion to drugs, we get too far away from nature.

What we should all realize is that food is the *friend* of our physical organism; *drugs are its enemies. The only excuse there is for the use of drugs in sickness,* is that they are enemies to our organisms. Drugs cure (not by cossetting, for only food does that) by *shock.* Any one can recall many a cure that resulted from non-drug shock. Whether shock will or will not conduce to cure in a given case, will depend on the vigor and rebound of the patient. If the patient is robust and not much reduced by sickness, shock *may* cure him; if he is feeble, shock will hasten his death. The truth of this statement will not be disputed, and the importance of it cannot be overrated. There is only one possible escape from the shock theory, and that depends on the assumption that a drug is a food! Since a drug is foreign to the system, not being assimilable, *necessarily* it *shocks.*

Drugs elect particular tissues or organs upon which they *mainly* express themselves. Thus, phytolacca has a *hostile affinity* for the glandular system. Therefore, in mammitis, orchitis, etc., we give this drug very confidently expecting it to raise a local riot in a particular class of glands. In the tumult the morbid trend is deflected into the normal one. That is the secret of drug cure.

For twenty years I have based my practice on those three axioms, and—immodest as it is to say it—my clinical success has been exceptional

Cleves, Ohio. WILLIAM COLBY COOPER, M.D.

THE TORONTO MEETING OF THE BRITISH MEDICAL ASSOCIATION.

The seventy-fourth annual meeting of the British Medical Association was held in Toronto, from Tuesday, August 21, to Saturday, August 25. This is the first time that this association has met in Canada and the second time that a meeting has been held outside of England. While recognizing the courtesy to an important colony and the wisdom of occasionally extending such a courtesy, the practical result was like that experienced when the American Medical Association has gone far from the centre of medical population, only to a considerably greater degree. Virtually, the meeting was one of the Canadian Medical Association, under the auspices of the British Association, and with a comparatively small attendance of the home members of the latter. Guests from the United States were much in evidence, were accorded privileges of the rostrum and the floor and were made generally welcome. There were also a number of medical men from India, Germany, Belgium, France and other foreign countries.

Notable features of the meeting were an address on the circulation from the peripheral standpoint by Barr, and one on surgical technic, especially with regard to brain surgery, by Horsley. The general sessions were held in the new Convocation Hall of Toronto University and, as the building was not completed, its acoustic properties were imperfect. Horsley and a few speakers offering resolutions, etc., succeeded in making themselves heard.

The section meetings were held during the morning only, with a few exceptions, and the programs were of great value. By following this plan, the fatigue and conflict between meetings and social diversions incident to recent conventions of the A. M. A. were avoided. In spite of sultry weather, with showers, outdoor as well as indoor entertainment was afforded and the various receptions, garden parties, etc., were most enjoyable and elaborate.

The business details, such as registration (enregistration), etc., were carried out in the familiar way, and with a minimum of friction. A very thoughtful and unique courtesy was the provision of the new and, as yet, unoccupied Nurses' Residence of the Hospital for Sick Children, for the housing of such guests as could not secure hotel accommodation. The small but well equipped bedrooms, ample baths and resting rooms of this structure were in marked contrast to the hall bedrooms with which many visitors to conventions have to content themselves.

About 2,000 were in attendance. Too much can scarcely be said in praise of those in charge of the various details of the meeting and not the least benefit of the cordial hospitality extended to physicians from the States, is the welding of another link in the chain of professional unity.

CLINIQUE

SCIENTIFIC TREATMENT OF HEART TROUBLE.

PESSIMISM is leaving this subject as well as it is tuberculosis; the cloud is lifting and we begin to take a more hopeful view of heart trouble.

Mitchell Bruce writes wisely on the prognosis of cardiac disease in middle and advanced life; for a careful diagnosis, the study of etiological factors is important, such as tobacco, alcohol, gout, syphilis and strain. In the tobacco heart the prognosis is favorable if abstention from the cause is practised; Bruce admits that he has not seen serious damage done by tobacco alone in sound hearts, nor arterial sclerosis as recorded by some authorities. The prognosis is far more unfavorable in the alcoholic heart, for two reasons: (1) When the habit is established the patient has not the will power to reform; and (2) the frequency of associated disease of a serious kind elsewhere. It is in gouty cases that the prognosis is difficult, but with careful management a large proportion may greatly improve and go on fairly well for some years; but the improvement cannot always be indefinite, for in addition to the extrinsic risks of Bright's disease, cerebral hemorrhage or thrombosis, and bronchitis, there is always the intrinsic danger of coronary and cardiac degeneration. In syphilitic cases the prognosis is still more unfavorable; only one half of Bruce's cases improved at all under treatment, and 20 per cent. died at most within a few years. In cases of physical strain in middle-aged persons otherwise healthy, the prognosis is favorable, and the condition is not fatal; nor in those over forty years of age, despite Osler, are the results anything like as grave as might be imagained. The great liability to relapse is the unfortunate feature. Disorder from nervous strain is amenable to treatment by complete and prolonged rest in the majority of cases, but we must never forget the possibility of inter-current acute disease; and in the application of the above principles to individual cases it is equally necessary to estimate correctly the entire of the patient's environment; his personal circumstances, character and disposition.

The general treatment of valvular disease requires some general consideration as to resting the heart, the advantage of systematic exercise, and the avoidance of all hurry and sudden effort. Prevent obesity; but the reduction of fat must be carried out with the greatest caution; the diet should never be reduced below two-thirds of the quantity necessary to maintain the ordinary weight of the patient, and a routine dietary should be avoided. Frequent and light meals should be preferred, of a reasonably mixed bill of fare, with moderate restriction of fluid drinks, especially during meals. Strong alcoholic beverages, tobacco or strong infusions of tea or coffee should be avoided; in moderate amounts they may be cautiously tried. The stage of compensation is the most auspicious time for exercise; and Van Noorden divides the means into two groups, systematic muscular exercises and hydropathic remedies. He regards uphill walking as the most perfect form—slow and steady walking, deep and regular breathing, avoiding talking during exercise. He also approves of rowing, either in a boat or with a mechanical apparatus, while bicycling, tennis and golf he considers less suitable, because they cannot be graduated and invite excessive exertion. Where uphill walking is not practicable he advises "resistance exercises." Massage cannot take the place of active exercise in these cases, but is often a valuable aid.

As with other German authorities, Van Noorden considers that among hydropathic measures the best is the carbonated Nauheim brine bath; the more perfect the compensation, and the more recent the lesion, the more suitable is the case for such treatment; yet those with whom compensation has just begun to fail, often derive great benefit; for these half-baths, the temperature of which is gradually lowered while the patient is sitting in the tub, are also of great value, and may be carried out at home. They should be followed by energetic friction of the skin, conducted by an attendant and not by the patient. They can be taken at home; no longer is it required to go to Nauheim.

Exercise is used in the treatment of heart disease for three different purposes: (a) To promote a proper standard of general nutrition; (b) to reduce resistance in the peripheral circulation; and (c) to train up the heart for harder work. Different kinds of exercise fulfil these indications; thus, massage may be taken as a type of that required for the first purpose; slowly executed resistance-exercises, for the second; and active exercise, such as hill-climbing, for the third. In prolonged rest, massage is almost essential to maintain an adequate circulation of the body-fluids and to neutralize the retarding effects of prolonged rest upon nutrition. With regard to resistance exercises, the all-important point is the selection of the proper cases; the exercises are not suitable for cases of cardiac excitement, palpitation and tachycardia, nor for cases of arterio-sclerosis with excessive arterial tension and albuminuria. Respiratory passive movements have been also found exceedingly useful by Satterthwaite; for patients in bed, they are instructed to lie on the back while the operator passes his hands under the chest and raises it slowly without lifting the person actually from the bed. This movement is specially adapted to obese patients, or to cases of cardiac dropsy; each respiratory movement is in the direction of artificial respiration, and should be repeated from one to five times a minute. Stronger patients are instructed to sit on a stool while the operator, standing behind, grasps the axillæ, the arms being raised, and raises the patient upward, at the same time bending him backward; use the various exercises as to give a pleasing variety, never making the séance at first more than fifteen minutes. In the heart diseases of children, Taylor says that in carefully selected instances the use of regulated activities afforded much relief to many of the distressing symptoms which accompanied and followed disordered conditions of the heart. The term "exercise" should be clearly kept in mind as being a normal use of the bodily parts—not merely of the muscular system, as it is usually understood, but particularly the inter-relation of the viscera and their mutual co-operation. The first and most important item is to teach the individual to sit, stand and move in proper attitudes. Then secure and practice full flexibility of the movable joints and skeletal tissues. An invaluable form of exercise is the act of breathing correctly, which should be taught, enforced and practiced. Taylor also relates his experience in adapting these measures to children, showing what remarkable results are sometimes brought about by movements which seem to be of the simplest sort. Among these he mentions readjustment of the muscles of the trunk and limbs, also stretching, both active and passive, and the cautious use of massage and baths.

Most of the movements should be begun in the recumbent posture, and all should be followed by long periods of recumbent rest.

Crook has done good work in the nomenclature and identification of cardiac neuroses. He divides them as follows: The term palpitation should be reserved for those cases in which it constitutes the essential feature of trouble, unaccompanied by any discoverable cardiac or general disease, while tachycardia should be applied only to those cases in which the increased frequency of the pulse is paroxysmal and well marked, even though it sometimes occurs as a complication of or in association with other conditions more pronounced. There should be no murmur nor other evidence of organic disease of the heart; the attacks end abruptly, and last from a few minutes to several hours or days. Bradycardia, on the other hand, is always a secondary condition, while the dyspeptic heart is purely symptomatic. It may take the form of palpitation, increased action, neurasthenia cordis, arrhythmia, or pseudo-angina; and its identification depends upon the due recognition of the disorder with which it is associated. Neurasthenia cordis or "weak heart," brought on by long-continued depressing emotions, frequent excitement, long marches, overstudy, masturbation, etc., or it follows convalescence from acute specific fevers, or is associated with exhausting chronic disease. It is a symptom of general neurasthenia. The irritable heart is closely allied to the foregoing, differing in that cardiac overstrain is a factor in its causation, and accordingly is frequently associated with dilatation. Arrhythmia includes all forms of irregularity or intermission, occurring apart from caridac or other organic disease; also tremor cordis—in which a quiet, steady heart is suddenly seized with a rapid fluttering, and the ordinary pulse suddenly drops to a mere tremulous thread, lasting for a few seconds and ending suddenly with an unusually forcible beat. The extreme degree of irregularity, intermission, and rolling-over sensation of the heart's action, known as "delirium cordis," is not a true nerosis, and is only found in association with organic cardiac disease. The heart of Graves' disease is a neurosis which is characterized primarily by its association with the other signs of Graves' disease; and secondarily by palpitation, increased frequency, and generalized throbbing of the arterial system.

Dealing with cardiac failure from an etiological rather than from a pathological point of view, Hare says that the various causes of cardiac failure come under the following five headings: (1) Changes due to sudden cardiac stress; (2) changes due to valvular lesions producing gradual cardiac stress; (3) changes in the blood vessels producing cardiac stress; (4) changes in the blood itself whereby the heart fails; (5) changes in the heart muscle of a degenerative character produced by toxic agents and senility.

Changes in the heart muscle frequently follow sudden strain, and occurring oftener than is generally thought; the valves often suffer damage at the same time, and the results which follow may be immediate or remote.

While Kernig has long taught that angina pectoris is due to thrombatic and embolic processes in the coronary arteries, and that the coronary sclerosis is liable to induce foci of softening or infarct in the myocardium or to involve the pericardium in inflammation by allowing the passage of bacteria through the walls of the smaller vessels, yet he has found that it is only in the severer forms of angina pectoris that such positive findings can generally be obtained. In describing typical examples of such findings, he noticed in one group slight fever after the attack, with appreciable enlargement of the heart, both subsiding under complete repose. In one case the attack was followed by temperature of 37.5 C., with pulse of 84.90 and 96, the heart found progressively broader following each attack. In another case there was dulness in the left second interspace, but this dulness was not apparent immediately after the attack, but developed in the course of the second day. The heart sounds were very loud in this interspace, close to the sternum, while they were very weak in the fifth interspace. He accepts these findings as evidence that the left auricle had become enlarged; this enlargement has been experimentally established as an almost inevitable consequence of occlusion of the coronaries. Circumscribed dulness in the second left interspace, close to the edge of the sternum, is one of the most constant signs of mitral stenosis. The third group includes five cases in which acute pericarditis followed the day after the attack of angina pectoris. Huchard found seven cases of recent pericarditis in 185 cases of angina pectoris which came to dissection; the list included also eleven cases of chronic pericarditis and fourteen of rupture of the heart. In two other cases of Kernig's experience the heart did not present any physical findings, but functional disturbances were manifest after the attack of angina pectoris, oliguria, edema, etc., illustrating the transitional forms between the cases with positive findings and those in which the angina pectoris does not seem to be followed by any disturbances. Kernig believes he has saved many patients from sudden death by ordering absolute rest in bed for days or weeks after a severe attack of angina pectoris.

The following table of differential diagnosis between true angina and hysterical pseudo-angina was prepared some years ago by Huchard. True angina is most common between forty and fifty years, being most common in men. Attacks are brought on by exertion, and are rarely periodical or nocturnal, nor associated with other symptoms. Vaso-motor form rare. Agonizing pain is present, and sensation of compression by a vise, the pain generally of short duration; attitude, silence; immobility. Lesion is sclerosis of coronary artery. Prognosis is grave, often fatal; while hysterical pseudo-engina occurs at every time of life, even at six years of age. Most common in women; attacks are spontaneous; often periodical and nocturnal. Associated with nervous symptoms; vaso-motor form common. Pain is less severe, sensation of distention. Pain lasts one or two hours; agitation and activity. Neuralgia of nerves. Never fatal.

Huchard in genuine angina gives iodide of potash for three or four years in doses of 45 to 60 grains daily, taking care to suspend it for eight or ten days each month; in rheumatic cases, sodium salicylate with rest, even temperature and dietetic care. The inhalation of nitrate of amyl to relax the peripheral arterioles, lower the blood pressure, and relieve the heart. Nitroglycerine and hypodermic injection of morphia are also useful for the same purpose, and act much in the same way. Hot applications to the chest. Faradization of the cardiac region, with internal administration of diffusible stimulants, belladonna, and small doses of opium can be tried.

Valerianate of amyl is a rather new drug suggested for angina pectoris; in odor resembling the russet apple, it has the physiological action of the ether group, producing general arterial excitement followed by drowsiness, and if absorbed through the lungs even anæsthesia. It has the power to dissolve cholesterine, and so has been tried in hepatic colic. Blanc says it is less prompt than ether, but it appears to be more lasting and more certain as a preventive. It can be agreeably used in capsules. In cases of dyspepsia, by no means uncommon in connection with hepatic disease, it may produce vomiting; in this case ether may be used at the start, or an injection of morphine may be administered. Later the valerianate of amyl may be given in 2½-grain capsules every quarter or half hour until the crisis is passed. The drug does not act by exciting the secretion of bile, but by terminating the painful spasm of the duct by the anæsthesia which it then produces to a greater or less degree, and by entering into the circulation prevents the concretion of cholesterin in crystals. In nephritic colics it acts only as an antispasmodic and general stimulant without affecting the calculus itself, although it benefits the accompanying reflext origin, intercostal neuralgias, muscular rheumatism, have been benefited. Menstrual colics are relieved cystitis. Nervous troubles, gastralgic crises, colics of reflex origin, intercostal neuralgias, muscular rheumatism, have been benefited. Menstrual colics are relieved and even the flow increased; and in this respect it is superior to apiol, especially as being less of an excitant, Anginal distress lessens after its administration, while it is excellent in hysteria.

Schott's method consists in the administration of warm baths, either simple saline, or saline with a large percentage of carbonic acid, at a temperature varying from 86° to 92° F.; the duration of the bath being from five to twenty-five minutes, short at first, but gradually lengthened. First come the simple saline baths at the higher temperature, and they are subsequently gradually and cautiously strengthened by the addition of a strong solution of the salts, while the temperature is gradually reduced. The baths are taken once every second day or daily for three days in succession, with one day's interval following. After the bath the patient remains undressed and lies down warmly covered, for at least an hour, extending over a period of from five to seven weeks; employ extremely simple but systematic exercises of the trunk and limbs; a principle of the gymnastics being that the patient's movements are restricted by another person. These exercises consist of flexion, extension, and rotation movements; a movement should never be immediately repeated, but followed by a short period of repose. It should not be made so rapidly or against such a degree of resistance as to cause acceleration of the pulse or respiration. All movements must be carried out slowly and steadily, without jerkiness. During the baths there is a slowing of the pulse with increased volume and strength, and irregularity, if any exist, is lessened or disappears. The cardiac contractions are increased in vigor and the cavities better emptied, thus permitting of a diminution in the size of a dilated heart. This marked and beneficial effect on the action of the heart does not disappear at once, but persists for a considerable time subsequent to the baths. If properly administered, the baths should produce a gradual and perceptible amelioration of the symptoms, while during the gymnastics the rate of the pulse falls and the volume and strength are increased.

Brandenburg, in reference to digitalis, states in his experimental research one phenomenon was steadily noted: it was that a small amount of digitaiin injected under the skin temporarily diminished the response of the heart muscle to stimuli of various kinds, while it increased its contractility. In discussing the clinical significance of this fact, he states among other points brought out that digitalin is contra-indicated in cases in which the irregularity of the pulse is due to morbidly increased automatic action of parts of the heart which normally do not develop movement stimulus. This class of cases includes certain forms of pulsus bigeminus in neurasthenic subjects; digitalin in such a case would only exaggerate the morbid tendency of the heart muscle.

A hopeful note comes from Davis; in discussing the prognosis in chronic valvular affection of the heart he suggests that actual recovery from a valvular lesion may take place by enlargement of a healthy valve to replace the deformity caused by disease of another. The average age of death in mitral stenosis is 50 years; in mitral insufficiency it is 40 years; and in aortic disease 36 years. In 250 cases which he records, he found that the average duration of compensation in mitral insufficiency was 5.1 years; in mitral stenosis, 11.5 years; in aortic stenosis, 7 years; and in aortic insufficiency, 2.3 years. The mitral lesions commonly cause death earlier, because they are likely to occur earlier in life, and they also lose their compensation rapidly. The duration after loss of compensation varied relatively little, being shortest in mitral insufficiency (2.6 years), and longest in aortic stenosis (3.8 years).

It is difficult to get exact data as to the size of the heart by means of percussion, due partly to the anatomical relations of that organ, and partly to the wide variations in the position of the heart, and the extent of its contact with the chest wall varying with the posture of the patient; hence it is a good habit to use percussion in the prone posture, which may be attained by having the patient on his hands and knees on a table, or standing upon a high-backed chair with the trunk bent forward, the right hand resting on the back of the chair, and the left arm placed loosely behind the back. The apex moves outward, sometimes outside the nipple line, and is more diffused; the area of superficial dulness is increased, and the transition from pulmonary resonance to cardiac dulness becomes much more abrupt and easily defined.

The binaural stethoscope is the best, owing to the suppression thereby of all sound due to the mere sympathetic resonance of the chest wall (Sewall): (1) It enables one to estimate more exactly the real energy of the ventricles from the intensity of the first sound of the heart; (2) it permits the more exact determination of the cardiac boundary, by the more or less abrupt diminution of the intensity of the sounds as the border of the ventricles is passed; (3) under normal conditions, pressure over the inner end of the second right interspace nearly or quite annuls the second sound of the heart, whereas, in marked aortic dilatation or aneurysm of the ascending aorta this is not the case; (4) it permits a more accurate interpretation of heart murmurs. Thus, (*a*) basic systolic "hæmic" murmurs often disappear with pressure over the base of the heart; (*b*) aortic systolic murmurs are suppressed by auscultation with firm pressure over the apex, whereas

mitral systol murmurs are not so; (*c*) pleural and pericardial friction sounds are generally intensified by pressure.

Opiates are often excellent in advanced cardiac disease, especially after repeated failures of other measures where complete rest of body and mind, aided by free administration of cardiac stimulants and tonics and the judicious use of purgatives, often fails to give relief; signs of cardiac incompetency are increasing; with increasing dropsy and dyspnoea with insomnia. The tone of the rest of the body is not sufficient to bring the needed rest to the heart; it remains irritable; its action becomes increasingly irregular; here the patient grows weaker and the paroxysmal dyspnœa increases. As a rule, as soon as he falls asleep, a severe attack of dypnœa causes him to awake and sit up in bed; the distress from the dyspnœa is great, but that from want of sleep is still greater. These cases are rarely benefited by the freest possible use of digintalis or other cardiac tonics and general stimulants, and if the dyspnœa is not due in part to effusion into the pleura and œdema of the lungs—which is persistent and not paroxysmal, as cardiac dyspnœa is—there is no remedy so effective in such a condition as morphine. In my experience, the comfort afforded by a hypodermic injection is almost incredible, but if given by the stomach it may fail even in much large doses, because absorption is so slow, on account of the venous stasis in the gastric mucous membrane.

There may be a vicious circle established between digestion and heart disease for venous stasis of stomach, intestines, pancreas, gall ducts, and liver intensified the difficulties of nourishment under such conditions, for not only is digestion impaired, but the glycogenic, urea-forming, and protective functions of the liver, are added to the problem; anæmia is thus added, also uric acid accumulation in the system, and deficient general oxidation. Two classes of cases were to be considered according to Babcock: (*a*) Those in which compensation was present; (*b*) those in which compensation was lessened or lost. In the second class the dietary must be restricted. The "gone" feeling and thirst in these cases were no indication for food, and food should not be given too often, but at intervals of five or six hours; the stomach should be spared, and the symptoms will improve. Hot water before meals was useful, while the amount of fluid taken with meals should be restricted. In the presence of œdema it should be reduced to a minimum. Starch, sugars, and fats are bad, owing to their tendency to cause flatulency and postprandial pressure; the proteids are indicated, apples, peas, beans, meats, oysters, being all good. When nephritis complicates it, milk can be used; when arteriosclerosis, no food containing much calcium salts should be allowed.

Bradydiastole is a peculiar rhythm of the heart characterized by a prolongation of the diastolic silence at the expense of the duration of the first sound, which is very short, and the interval between this and the second sound, so that the rate of the pulse is not increased to any extent. While it has been observed in comatose conditions, in grave cerebral hemorrhage, and in uremia, the bradydiastolic rhythm is of special prognostic value according to Huchard in all chronic diseases of the heart and in digitalis poisoning, where it is the sign of a progressive and ultimate degeneration. Digitalis no longer realizes its beneficial effects, and is positively injurious. When it is observed without being followed by grave accident it should always be regarded as an important warning of a possible rapidly progressive dilatation of the heart, showing that the heart receives in each of its revolutions much more blood than it can expel. Phlebotomy is indicated for the relief of the engorged ventricles, together with the administration in full doses of cardiac stimulants, as strychnine or spartein in full doses and by hypodermic injections of caffeine.

Broadbent, referring to the hardship caused by the needless rejection of army and public service candidates because of temporary heart disturbance under the influence of excitement, and the depressing conditions of preparation for examination, says: "It would take a great deal to make me reject the captain of a football team of a large school. Such disturbance of the action of the heart, however exaggerated, is not inconsistent with perfect soundness and efficiency." "A fair test" would be to make the man run a mile around one of the cinder paths at his own place, noting his time, but especially the period at which he got his second wind, and how he finished up. Sometimes a run up two flights of stairs would bring the heart to its senses. A more common cause of rejection is the presence of a murmur which may be perfectly innocent of significance; such murmurs may simulate closely a soft systolic mitral, but are heard only during inspiration or when the chest is full, and are due to compression of the overlapping lung by the heart during systole. Pulmonary murmurs may depend on bulging of the conus arteriosus against the chest wall; they disappear when the lung is interposed on deep inspiration. Sometimes bruits are heard, not only in the course of the ordinary mitral regurgitant, but over the greater part of the lung. In such cases there is usually pleural adhesion. Such bruits have been looked upon as indicative of valvular disease, requiring treatment by digitalis and demanding all sorts of precautions in the matter of exercise. Broadbent mentioned the case of an athlete, aged twenty years, who presented a murmur resembling the mitral regurgitant, and also one over the pulmonary area. Apart from the bruits, the heart sounds were normal, and there was no accentuation of the pulmonic second sound; the left side of the chest was narrower than the right and moved less on respiration. The condition was probably due to pleuro-peri ardial adhesion, and after five months' very vigorous exercise the patient was none the worse. The criterion of pseudo-mitral disease is absence of displacement of the apex beat and of accentuation of the pulmonic second sound, or undue right ventricular impulse, together with absence of symptoms. Broadbent, after experience, believes that restrictions as to games in such cases, except with regard to football, house runs, and training for races, are often needlessly imposed. There is food for thought in these remarks of this excellent English authority.

The Impurities in Ice.—Sacerdote finds (*Presse Medic.*) that the center of a cake of artificial ice is generally opaque, while the part first frozen—the outside—is generally clear. As water freezes slowly, all the impurities are pushed away from the part first freezing. Whatever the character of the water which is frozen that obtained by melting the outer, clear parts is almost perfectly pure, while the central, opaque parts contain the impurities. Bacteria do not escape this law; but will be found centrally congregated.

RETROSPECTIVE

Hæmoptysis.—Pic and Petijean (*Lyon Med.*, Feb. 12, '06) believe from both their laboratory experiments and clinical experience that nitrite of amyl is the most useful pulmonary hæmostatic. From three to nine drops should be inhaled. The latent period is short—from half a minute to three minutes; no vaso-dilitation succeeds the vaso-constriction; there is no fatal poisoning; the hæmostatic action resulted either in the early congestive stage or in the period of cavitation. In the laboratory a curarized dog was kept alive by artificial respiration. The fall of arterial pressure in the larger circulation was first noted. The color of the lungs was observed before and after injection of the amyl nitrite; after the injection the normal rose color gave way to a white anæmic tint, beginning in patches which extended and coalesced so as to involve the whole pulmonary parenchma. This action lasted for about eight minutes and was so marked that upon deep section of the lung at the end of the latent period after the injection, the bleeding ceased almost as if a ligature had been applied. A pressure tracing showed a marked rise of blood pressure after the injection, a rise which was maintained for ten minutes. It is not claimed that amyl nitrite is a certain specific for hæmoptysis; but it is the first among the vasomotor drugs in this condition. In cases where the hemorrhage is due to right heart enlargement digitalis will give a better and more permanent result.

The conduct of a normal labor is succinctly described by J. M. Clemens, of the Johns Hopkins Hospital (*Surgery, Gynecology and Obstetrics,* Feb., '06). During pregnancy *the patient* is to take as much outdoor exercise as possible, guarding, however, against fatigue. On the first day of each month she is to send a mixed (night and morning) urine, eight ounces for examination, with her name affixed; this to be done semi-monthly during the last two months preceding the labor. From and after the sixth month the nipples must be bathed in a solution of four ounces of alcohol and water to which a tablespoonful of borax has been added; this solution is to be kept corked and applied by means of absorbent cotton. Six weeks before the expected confinement an outfit should be bought, which will include everything essential for the doctor and the nurse; in addition must be provided two pieces of rubber sheeting ¾ by 1 yard and 1 by 2 yards respectively; a bed-pan; two small round agate basins; a two-quart fountain syringe; 25 yards of gauze; two pieces of cotton batting for making bed-pads, or four ready-made sanitary bed-pads. The nurse is to be sent for as soon as labor pains begin. She will use her judgment in sending for the doctor, unless some emergency arises. She must notify the doctor at once if any of the following symptoms occur during pregnancy—scanty urine; persistent headache; disturbed vision; swelling of face or feet; loss of blood; persistent constipation; or when anything is felt to be not as it should be. The physician should call five or six weeks before the expected confinement, to ascertain the state of things, and to give any desired advice.

The nurse, in making preparations for labor, must see to it that the patient has prepared a confinement outfit, and the other articles called for in the directions for patients, which should include everything needed by the doctor or the nurse, except baby-clothes. A sufficient number of sterile bed and vulval pads must be made. A week before the expected event five packages should be prepared for the physician: two containing six towels or diapers each; one containing leggins, another cotton pledglets, and another gauze sponges. These are to be carefully sterilized and labeled.

At the time of labor: If pains begin between 7 a. m. and 11 p. m., the physician should be notified as soon as possible, so that he may make his plans accordingly; but if labor begins between 11 p. m. and 7 a. m., he should not be notified until the pains are strong and frequent, or unless the nurse thinks the doctor should see the patient at once. At the commencement of labor two large pitchers are to be filled with boiling water and covered with clean towels. When labor has definitely set in the patient must have a warm bath and a soapsuds enema. The bed is to be made on the left side. A piece of oilcloth or an old rug must protect the carpet. No vaginal douches must be given. No vaginal examination must be made under any circumstances. The patient must be prepared for a vaginal examination by placing her upon a Kelly rubber pad. The genitalia must then be washed thoroughly from above downward, toward the anus, with soap and hot water, using cotton pledglets instead of a wash cloth. The pubic hairs may be cut when necessary; then the vulva is to be bathed with 1-1,000 bichloride and afterward covered with a folded towel soaked in the same solution. Before an examination, or when the birth appears imminent, the night-gown must be rolled over the patient's hips and the obstetrical leggins put on. As soon as labor is over, the genitalia must as before be cleansed, bathed with bichloride and covered with a sterilized pad. A sterilized bed-pan must be used. An abdominal binder is not to be used until after the tenth day, unless other directions are given. The vulval pads are changed as often as necessary, the genitalia being washed each time with 1-4,000 bichloride. Temperature and pulse are to be taken and recorded, unless otherwise directed, four times daily, at 8, 12, 4 and 8 o'clock. The catheter is not to be used unless the bladder is distended and until the patient has failed to urinate in the sitting position. A half-ounce of Rochelle salts is to be given the morning after labor, and to be repeated in four hours if not effectual. The nipples must be bathed with saturated boracic solution before and after each nursing. Cracked nipples must be looked for carefully, and reported. The diet for the first 24 hours consists of milk, soup, coffee or cocoa and buttered or soft toast; to this is added, on the second and third days, boiled or poached eggs, raw or stewed oysters and wine jelly; to this again are added on the fourth and fifth days, chicken, sweetbreads, potatoes and rice; and after this the patient's customary diet.

The Nauheim methods in heart diseases are dwelt upon by Kinnicut (*Bost. Med. and Surg. Jour.,* May 17, '06). There are three springs used for bathing purposes, their chief constituents being sodium and calcium chloride, and carbonic acid gas free and in combination. A system has been elaborated which permits of a wide variation in the saline and carbon dioxide strength of the baths, and they are known as they vary in their different constituents as follows: The ordinary brine bath, the thermal brine bath, the thermal effervescent bath, the effervescent bath, the current thermal brine bath and cur-

rent effervescent bath. Kinnicut describes the course of baths, from twenty to thirty-five in number. In healthy subjects the immediate effect of immersion is a notable diminution in the frequency of the pulse and a distinct increase in its volume. The "Schott resistance exercises" used in connection with these baths, consist of movements designed to bring into successive and regulated action almost every collective system of voluntary muscles in the economy, without undue strain on heart and lungs. The baths are indicated for enfeebled, relaxed, dilated hearts, with or without a murmur of muscular or relative mitral incompetency, following prolonged and exhausting diseases, the various acute infectious diseases, and also associated with anæmia of varied causation. Anginas and general arterio-sclerosis should be treated with great circumspection; aneurism and general emphysema are *not* to be treated by these baths.—MEDICAL TIMES, June, '06, p. 189.

The child must be left alone until the mother is cared for, wrapped in a woolen cloth and put in a safe place (not on the mother's bed or upon chairs). Its eyes must be washed with boracic solution. It must be rubbed thoroughly with vaseline or sweet-oil, and then be given a full bath, using castile soap and warm water. The cord must be dressed with boracic acid and sterile cotton; and this dressing is not to be changed until necessary. The child is to be washed daily in the nurse's lap; the full bath is not to be repeated until the cord comes off. Until the mother's milk appears, the child is to be nursed three times a day, giving no other nourishment unless directed. After the milk appears the child must be fed, except after its bath, every two hours, by the clock, from 6 a. m. to 10 or 11 p. m. One feeding must be timed to come directly after the bath, upon which the child may, if it will, be allowed to sleep for three or four hours. There is to be but one feeding during the night. Before each nursing the baby's mouth must be washed out with boracic solution. After the first three weeks one or two bottles of milk should be given a day, no matter how much milk the mother may have. The child's weight is to be taken and recorded twice a week.

The confinement outfit should comprise: potassium permanganate, oxalic and boric acid, bichloride tablets, chloroform, alcohol, green soap, vaseline, ergotole, two pieces of rubber sheeting, one bed-pan, two basins, one fountain syringe, absorbent cotton and gauze, cotton batting, bed-pads, leggins, large and small safety pins and nail-brush.

The prophylaxis of lobar pneumonia involves the following points (J. M. Anders, *Am. Med.*, Mch. 31, '06): Thorough and prompt sterilization and staining of pneumonic sputum and of all secretions from the upper respiratory tract. Isolation of pneumonia patients whenever possible; most clinicians now agree that the pneumococcus is directly transmissible. Hardening of the body and accustoming it to cold air and cold water. However, prolonged exposure during inclement weather or after great fatigue predisposes, especially the aged and the weak; a tonic of strychnine, quinine and gentian is appropriate for such cases. Colds and all catarrhs should receive prompt and energetic treatment. Nasal obstructions should be corrected and the diet and general hygiene should be regulated. Health Boards should issue systematic details concerning the prevention of lobar pneumonia. All practitioners should be provided with copies of carefully prepared regulations, which they should be obliged by the authorities to carry out. The populace should be made to understand that the stronger alcoholics are deleterious in their influence, lowering resistance to infection during the pneumonia season.

Traction in Hip Disease is advocated by E. H. Bradford (*Am. Jour. Orthopedic Surg.*, Jan., '06). When there is pressure, crowding the head of the femur against the acetabulum; when, in an acute stage an exaggerated muscular irritability or spasm exists, which crowds the head of the femur as just stated; when in bone disorganized from ostitis the violence of frequent contusion, or the crowding of one inflamed surface against another, is not favorable to healing; when a force, which will counteract muscular spasm and draw the head of the femur away from the acetabulum, favors correction, prevention of deformity and more rapid healing of the diseased bone tissue. Experiment and the X-ray demonstrate that a traction force can be applied which will not only entirely overcome the spasm of the muscles about the hip, but which will also, unless ankylosis has been established, draw the head of the femur away from the socket. The clinician has learned the advantage of a traction force applied for distraction during the acute stage of hip disease. Traction is not needed during the whole period necessary for the treatment, but only during the stage of active muscular spasm. During the ulcerative stage fixation of the joint and strong traction are both needed; limited motion of the joint is not injurious, but protection from violence is essential until the bone tissues have regained their normal strength.

In the vomiting of pregnancy, when no local lesion or malposition can be found, C. Rosewater (*Jour. A. M. A.*, Jan. 13, '06) advises the patient to stay in bed at least an hour after breakfast; and gives ingluvin, ten grains before and after each meal. This treatment usually suffices for mild cases. In the severer forms there is usually some pathological condition, the righting of which will be followed by relief. The use of extreme measures tending to produce abortion and such as are carried beyond the absolute necessity of the case are reprehended. In one case Rosewater was able to check the vomiting which was threatening the patient's life by inserting a bougie into the uterus and leaving it there forty-eight hours until the distressing symptoms ceased; the pregnancy was not interrupted and the case went on favorably to full term. Generally, however, this procedure results in abortion. Merely to insert the tip of the finger within the external os will oftentimes relieve the distressing vomiting, without interfering with the course of the pregnancy. Rosewater believes that "when in pregnancy, for just and lawful reasons, the emptying of the uterus is resorted to, and during the operation improvement in the fundamental conditions supplying the excuse for the abortion occurs," the physician should, if not too late, cease in his attempts to cause abortion, and should make all efforts to save the child, as well as the mother. Here he is right. Such a procedure should be resorted to only to save the mother's life; if, in doing this, that of the infant can also be saved, the latter should by all means be vouchsafed, if possible. After the mother has been guarded from death, it were criminal to neglect the title of her infant to life.

Constipation is divided by Stunn (*St. Paul Med.*

Jour., Jan., '06) into two groups, the atonic and the spastic. The former is the usual form and is not accompanied by pain. The spastic type, which is the rarer, is usually characterized by pain, which may be located in any part of the abdomen, but mostly somewhere along the course of the colon. The pain as a rule bears no relation to the ingestion of food; it varies in severity and duration; may be sharp and lancinating, or dull, heavy and cramping. When the abdominal walls are thin, one's fingers may, perhaps, detect the contracted segment of the intestine. The spasm can be felt by the finger introduced within the rectum. The character of the stools—cylindrical, from two to four inches in length, and a quarter inch in diameter—indicate this condition. Sometimes these stools are triangular, or ribbon-shaped masses; stringy mucus may accompany their passage. In therapeusis one must bear in mind that there is an irritative condition in the large intestine, and that the ordinary methods used in atonic constipation will only prove aggravating. Such patients have usually found the ordinary cathartics of no avail. A diet rich in cellulose and producing an abundant digestive residue, such as is often advised, and such as is certainly useful in the atomic form, is harmful in the spastic type. Fruit may be allowed—cooked rather than raw. Exercise may be objectionable; rest improves most of these patients. Warm baths and hot abdominal applications will relax the spasm and relieve the pain. Cathartics must be avoided in these cases. Belladonna and opium relieve the spasm; but their continued use is objectionable, especially of the latter. Injections of olive or cottonseed oil are the best—used at first every evening, later every second evening, and finally once or twice a week. The oil—a pint injected just before going to bed and retained till morning—lubricates the intestines, softens their contents and splits up the fatty acids. The last action probably causes an increased peristalsis through chemical excitability. The oil is best given with the patient on the right side, the left limb extended and the right flexed at the knee and placed in front and over the extended left one. A moderate sized rectal tube is passed seven or eight inches into the rectum at a temperature of 100 degrees. Electricity, massage, severe exercise, cold baths and other measures appropriate to atomic constipation should not be used in spastic cases.

Respiration Innervation.—The *N. Y. State Journal of Medicine* recognizes that theory regarding a number of brain functions has been so complicated by the assumption of several centers for each that little use could be made of related clinical phenomena. One of these, that of the regulation of breathing, has, however, been materially simplified by recent work. Nikolaides concludes: I. In the oblongata there is a center for normal respiration, *i. e.*, the rhythmic change of tension (inspiration) and relaxation (passive expiration) of the same muscle group, the inspirators. II. There must also exist in the oblongata a center for actual expiration. III. The center for normal respiration is influenced by an inspiratory inhibiting center, which lies in the posterior quadrigeminal bodies; its removal, even where the vagi are intact, is followed by changes in the respiration. IV. The center for active expiration is inhibited in its activity during normal respiration by an expiratory inhibiting center which exists in the anterior quadrigemina or in the parts beneath them. V. The inspiratory centers described in the various parts of the brain-stem above the oblongata are properly inspiratory tracts, the centers for which lie in the cerebral cortex. Mavrakis and Dantas conclude: "There exists a spot in the upper part of the precentral convolutions irritation of which calls forth definite and pure respiratory movements, unaccompanied by any other motion. The centrifugal fibres from this spot traverse the internal capsule, the foot of the crus, and the basal ganglia in the midbrain, in which they run very close to the middle line on the corresponding side, to their termination at the respiratory center in the oblongata; these fibres consequently do not cross, but pass on the same side, at least to the midbrain.

Railway Brain Strain. — Hughes (*Alienist and Neurologist*, May, '06) finds that railway employees are in large measure overtaxed in their work; and are moreover subject, when off duty, to influences which tend to vitiate the integrity of the mental powers. There is much too often excessive overtime work. Accidents are practically certain of occurrence when train dispatchers, engineers, or switchmen, serve continuously from forty-eight to seventy-two hours, or even for twenty-four hours. Such excessive brain strain in all departments of public service should cease, especially when consequences are so serious as in the railway service.

Infantile scorbutus usually results from the use of some diet unsuited to the individual child; the farther a food is removed from the natural food of a child the more likely its use is to be followed by the development of scurvy. The absence of freshness and the heating of the food are also very important elements (J. L. Morse, *Jour. A. M. A.*, April 14, '06.) The earliest symptom of scurvy is loss of color, which is often associated with loss of appetite. The first symptom upon which the diagnosis may with certainty be based is tenderness or pains in the legs or back on handling. Swollen and purple gums and hæmaturia may, however, precede the tenderness and pain. The latter symptoms, elicited on motion, almost always develop sooner or later, and, in half of the cases, are accompanied by swelling about the diaphyses. The legs are affected three times as frequently as the arms. The gums are affected in about half the cases—almost always when there are teeth, very rarely when there are no teeth. Hemorrhages, except under the periosteum, are rather uncommon. In treatment one must give not only a rational food, but also one suited to the individual case. Morse would stop much sterilization and peptonization, and the use of proprietary foods. He would use milk mixtures and would stop pasteurization if the milk supply and the time of year permitted. Beef juice may be used. At least one tablespoonful of orange juice *per diem* is necessary; the juice of half an orange is "amply sufficient to bring about a cure;" in some cases lemon juice may be appropriate.

The value of anti-malarial public works has been demonstrated at Klang and Port Swettenham in the Malay States. A large area was drained and covered with grass at a cost of $50,000, with the result that the death-rate from this disease in 1905 was 45, whereas in the year before this was done the deaths numbered 368; in the surrounding regions which had not been drained the deaths were greatly increased in 1905.

MISCELLANY

The safe kind of whiskey, declares Dr. Wiley, of the Department of Agriculture, is that which is bottled; "the records show that whiskey left in a bottle has never injured any one seriously," states *Harper's Weekly.*

A sensible view of medical etiquette is held by the London *Spectator* which declares that, instead of being kept up, as people so often imagine, in the interests of physicians, it is really maintained in the interests of the public. It is the public, not the doctors, who would suffer most, were medical ethics entirely done away with.

The high handshake, it is announced, is again to become fashionable. This is well characterized as a style that puts ice down the back of the coming guest and makes him glad to go. "No one can give the high handshake and take credit to himself for the possession of a single hospitable instinct." A strong sentiment, but not without justification.

Primary sarcomas of both adrenals, in one case which presented no symptoms of Addison's disease, were observed by Blackburn (*Am. Jour. Med. Sc.,* Aug., '06). The existence of these tumors was not suspected until after death. The symptoms present suggested gastric carcinoma, although the more characteristic symptoms were absent.

Stereoskiagraphy is described by Stover, of Denver, Colo. (*N. Y. Med. Jour.,* Aug. 25, '06), as the arrangement of a pair of skiagrams of the part examined in such manner that one obtains, by means of a special stereoscope, a view conveying perfect perspective. This should be a most useful means of X-ray diagnosis, as any one must conclude who has seen the wonderful sense of perspective attained in the ordinary stereopticon.

Typhoid Fever Complicating Pregnancy.—Foulkrod asks (*Am. Jour. Obst., Aug.,* '06) whether there is "something generated by the pregnant woman which in a certain measure protects her from the more virulent attack of the toxins of typhoid fever, and that the course of the typhoid during pregnancy is undoubtedly modifying should it occur at such a time when the serum or cells have been charged with immunizing bodies."

Cæsarian section was done by Brunet in a case of severe hemorrhage from very large vaginal varicosities. The bleeding could be controlled only by packing, states the *Medical Record;* and each time that the dressing was changed the hemorrhage endangered the patient's life. It therefore seemed unadvisable to permit delivery by the normal route, and Cæsarian section was followed by recovery of the mother and the birth of a healthy child.

Prof. Brouardel died recently in Paris. He was greatly devoted to the science of municipal hygiene. He enlisted in the fight against tuberculosis. He taught early in his career that typhoid fever may be spread by means of a contaminated water supply. He was much interested in medical jurisprudence. As director of the laboratory of the Morgues, he made this institution a model school of pathology. He was truly a great physician and a noble citizen.

The spanemic heart is one which, by reason of deficient nutrition of muscles, is dilated or dilatable. Jackson (*N. Y. Med. Jour., Aug.* 25, '06) has found three varieties: the heart which is insufficiently nourished on account of general anemia; the heart insufficiently nourished indirectly because of more or less persistent vasamotor failure, the blood being normal; the insufficiently nourished heart from a combination of blood disease and vasamotor instability.

Vienna hospitals are so overcrowded (*Jour. A. M. A.*) that a sick workingman tried to gain admittance to the various public hospitals in turn, but was constantly turned away for lack of room. In order to get into some such institution he reasoned that if he could get himself arrested he would then be given hospital treatment. He stole a pair of shoes, was arrested and in the jail was given the needed medical care and treatment. On his recovery he served a brief term for petty larceny.

In drug giving Shattuck (*Boston Med. and Surg. Jour.,* March 29, '06) lays down general rules: to do no harm; to have a clear idea whether we give the drug—as a specific, a curative, a palliative or a placebo; to give the drug uncombined, if possible, though to this rule there are many exceptions. When using an efficient drug one should be sure that the preparation is efficient; and should continue its use until either the desired effect or toxic manifestations are produced. [Be sure your druggist is an accurate compounder and uses *fresh* material.]

The designation of one's associate in medicine is discussed by *The British Medical Journal.* The term "assistant" is distasteful to many medical men who probably feel that one man is as good as another and would be a great deal better but for the lack of opportunity. The benevolent and diplomatic principal would speak of his "colleague." Some have even filched from the clerical profession the title "coadjutor." A well-intentioned old lady, on being asked whether she had seen her doctor, replied: "No, but he has promised to send his accomplice." How will "associate" do.

"Hunger days" in diabetes are counseled by Naunym and Tyson (*Progressive Medicine*). The occasional interposition of a day during which nothing but tea and bouillon are allowed, is very wholesome. When the sugar in the urine has been reduced to a minimum, this practice not only causes the sugar to disappear, but increases the limits of tolerance thereafter. (Medication is of course essential in diabetes; but the patient will be most certainly relieved by the elimination of starches and sugar from the diet so long as the urine is diabetic).

Bellevue Doctors Robbed.—There are some fifty young physicians in this institution, and it is reported that nearly all of them sustained important losses by means of the activities of one or more thieves. It appears to us that the man who would steal from a doctor has reached the very lowest stage of depravity. For the doctor gives so much of his time and strength without money and without price, to ameliorating the conditions of the underworld; he is, more than any other man, the friend and real helper of the destitute. But what shall be said of those who steal from the young hospital physician, who generally has reached the very limit of his financial resources, after his many costly years of preparation for his life's work; and for whose efforts in behalf of the hospital sick the return is merely bodily sustinence and a place in which to enjoy all too brief and always interrupted repose?

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SELECTIONS

Spraying for Diseases of the Respiratory Passages.—Dr. David Walsh, senior physician to the Western Skin Hospital, London, writes: "Glyco-Thymoline was brought to my notice as an excellent lotion for nasal and oral sprays and washes. On due inquiry it was found to fulfil the two conditions usually recognized by medical men in the United Kingdom as vouching for the character, so to speak, of such a preparation. First, its advertisements are accepted by our three leading journals, the Lancet, British Medical Journal, and the Medical Press and Circular. Secondly, its composition is not a secret, its formula being freely published. Under these circumstances I determined to try the effect of this preparation in a few suitable cases. As a general antiseptic that does not coagulate albumen and is non-irritant, deodorant and practically non-poisonous, Glyco-Thymoline has clearly a wide range of usefulness. My own observations, however, have been practically confined to its use in the nose and mouth, with results that have proved satisfactory in every instance, especially in acute coryza, pharyngitis, influenza, and septic conditions of the mouth."

Effect of Leading Nutrients Experimentally Determined in Comparison with Bovinine.—With a view to ascertain precisely how topical nutrition can be best effected, a series of experiments was conducted and various forms of nutriment applied to ulcerated surfaces. Dilute solutions of sugar, starch, predigested starch, malt extracts, peptone broth, beef tea, extracts of beef, dissolved pepsin, papoid, ichthyol, milk, and the preparation known as Bovinine. Ten consecutive cases were tried with each substance and the effect observed, care being taken to note any existing diathesis in each particular patient, which, if discovered, was promptly treated. In most of the experiments three or more substances were used on the same patient at the same time, according to the number of ulcers, and while all rendered more or less benefit, milk, and Bovinine, were more prompt in their action than the rest. Further experiments, however, proved that milk turned rapidly sour and produced irritation. A series of experiments were also conducted with Bovinine and iodoform on the same patient; here the ratio was found to be about ten to one in favor of the Bovinine.

Acetanilid Poisoning from Absorption. R. M. Goepp, Philadelphia ("Journal A. M. A.," August 4), gives an account of a woman, aged 37, who had been using acetanilid as a dusting powder for a very large varicose ulcer for eleven months, averaging probably nearly two drams a day, a large part of which must have been absorbed. The diagnosis of acetanilid poisoning was made from the clinical symptoms, weakness, loss of weight, headache, dizziness, some nausea and vomiting, marked cyanosis, dyspnea, weak heart action and general nervousness. The paramidophenol urine test, mentioned by Herrick and Irons, was not employed, but Goepp thinks it a valuable one. The patient improved rapidly on the withdrawal of the acetanilid and iron and strychnin, and the improvement has continued. There was no permanent habit or craving; the withdrawal was easy. The author mentions another case in his observation of a man who sometimes takes as much as 50 grains of acetanilid in a day and presents a typical picture of the acetanilid habit. He remarks on the dangerous use of bromo seltzer, which is not generally understood to contain as large an amount of acetanilid as is the case. Orangeine is another misleading nostrum. He refers to the familiar street-car advertisement of this preparation which pictures two faces—one, "before taking," of a cerulean hue, and the other, "after taking," with the rosy blush of health. If the manufacturers, he says, would reverse these two faces and add a skull and cross-bones to the advertisement, they would "give the public a more correct idea of the true nature of their deadly preparation."

Impotence Caused by Bromo Seltzer. W. J. Robinson, New York ("Journal A. M. A.," August 18), reports a case of a married man who consulted him on account of loss of sexual power, but who also suffered from cardiac symptoms, digestive disorder, etc., and has had severe headache for over a year. Inquiry developed the fact that he had been taking bromo seltzer for a long time and was using an average of two dollar-size bottles a week. The drug was voluntarily discontinued by the patient when informed as to its connection with his condition. Under proper treatment his headaches ceased, and he is now a well man. Robinson thinks that a continuation of the nostrum would have been fatal in this case. Its special action on the sexual organs seen in this case, he thinks, has not been hitherto reported.

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SELECTIONS

The Carbolic Difficulty. The question of prescribing poisons, more especially carbolic acid, is a complicated and vexatious problem which frequently embarasses physicians. In many cases a simple way out of this difficulty will be found by prescribing Tyree's Antiseptic Powder which possesses none of the objections to corrosive sublimate, carbolic acid and other agents of this class—namely, toxicity, chemical union with albumin, superficial effect only, change to inert compounds, corrosive action upon tisues, harm to metal instruments, injury to hands, etc. Many leading specialists and general practitioners, at home and abroad, are employing Tyree's Antiseptic Powder because they find it efficient, convenient, economic; of general utility, without injurious effects, immediate or remote, local or constitutional; healing, as well as antiseptic and germicidal; and equally well suited for use by patient as by medical attendant. One part in fifty of water, or smaller quantities, is rapidly germicidal to the most resistant bacteria. Weaker solutions are still valuable antiseptics. That makes Tyree's Antiseptic Powder highly economic. Sample and particulars from J. S. Tyree, Chemist, Washington, D. C.

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Growth of Agriculture. One of the most significant signs of the times (L. H. Bailey, in the September "Century") is the rise of the agricultural industries into commanding position and the awakening of a general interest in rural subjects. Every one seems to be aware that agriculture is making great progress. Now, all progress in the arts and industries rests on knowledge and the imparting of knowledge; in this case it rests very largely on the activities of experiment stations and colleges. The work of these institutions, accumulating slowly and methodically, has leavened the lump. If there is an agricultural problem, these institutions are to make the heaviest contributions toward solving it. Now and then pieces of this great body of work are hit upon by a magazine writer as "discoveries," and he runs wild about them; but the real advance is the result of small accretions.

With all the awakened interest and the exploiting of individual instances, the townsman is not yet aware of the tremendous rise in the tone and efficiency of the entire agricultural industry, which may well be likened to the gradual elevation of a geological stratum of continental extent. At the same time, the agricultural population is retaining its old-time vigor, independence, and native philosophy. The student who enters this field will most assuredly not succeed unless he has good talents and efficient training and properly estimates the problem; but it is nevertheless perfectly evident not only that an educated man can succeed in agricultural arts, but that in time this type of man will be the only one who can hope for the best results.

In chronic mastitis the existence of pain and swelling of the glands in the axilla often awakens a suspicion of cancer. If the affected area is adherent to the skin and muscles, with puckering, the diagnosis may be impossible before a microscopic examination has been made.—*Int. Jour. of Surg.*

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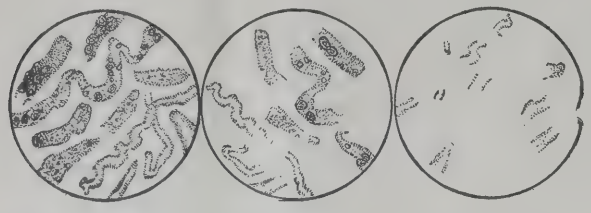

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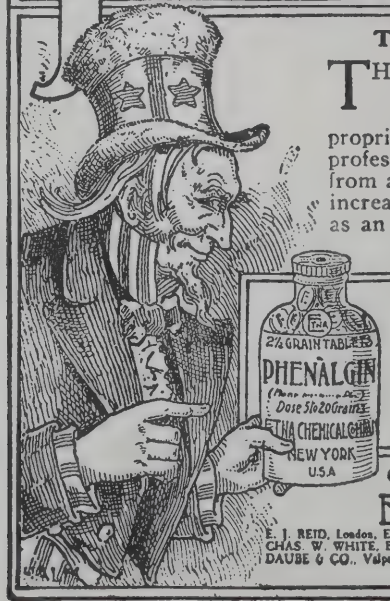

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Cases of lateral curvature of the spine (*Int. Jour. of Surg.*) must be early recognized and treated, for otherwise the deformity is apt to become so fixed that a cure is no longer possible.

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Epilation is of great importance in all follicular inflammations of the skin, since it not only removes a host of microbes, but also affords access for antiseptics to the deeper parts of the follicle.—*Int. Jour. of Surg.*

To prevent the development of strictures of the esophagus after the swallowing of caustic substances, regular introduction of bougies should be resorted to at the end of a few weeks after the occurrence of the accident.—*Int. Jour. of Surg.*

Eczema of the breast should always be viewed with suspicion, for it may be a symptom of Paget's disease and precursory to cancer. In these cases the growth may for a long time appear as a superficial ulcer, and thus lead to errors in diagnosis.—*Int. Jour. of Surg.*

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—The Coca Leaf, September, 1905.

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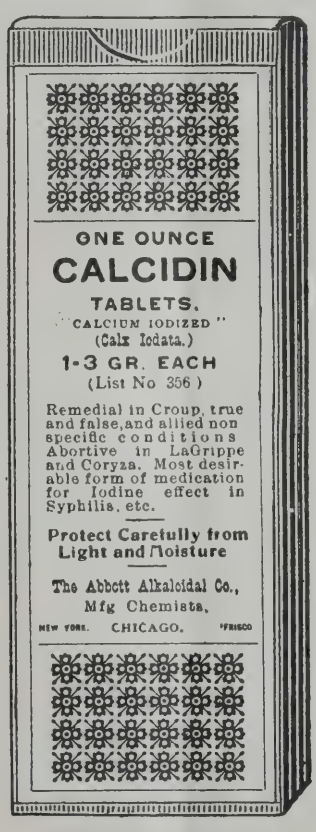
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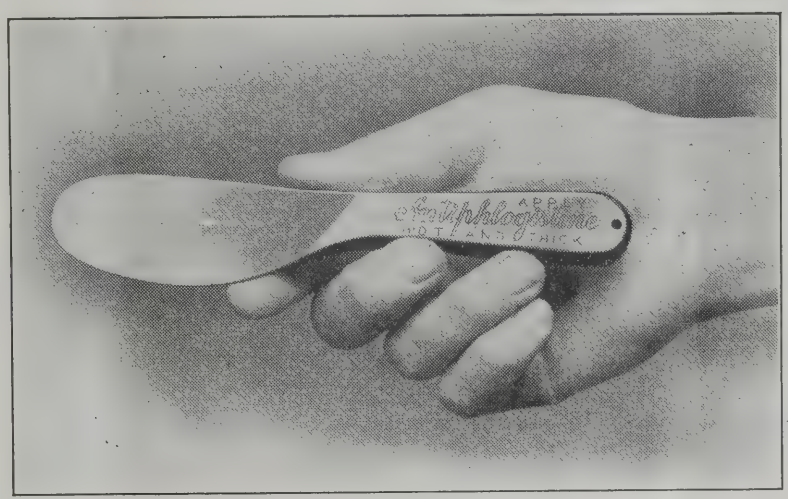

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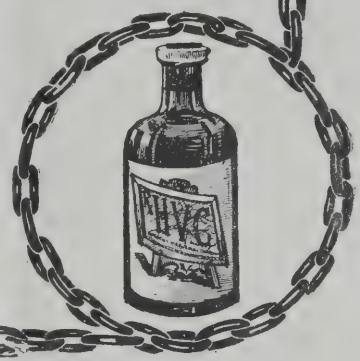

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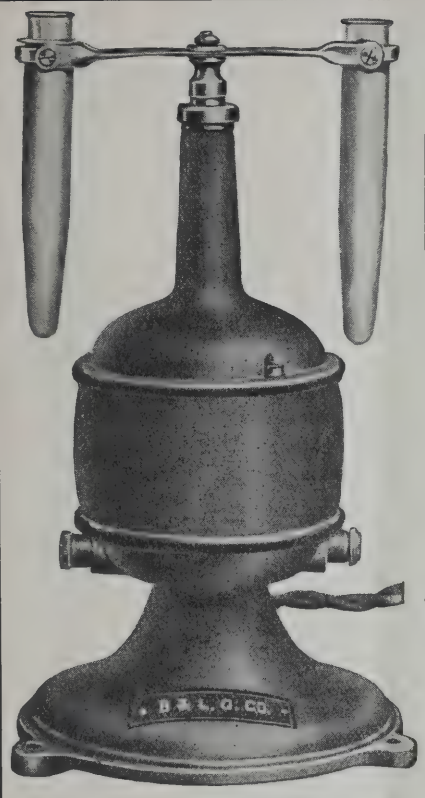
Dr. J. Allison Hodges, *Pres. University College of Medicine, and Prof. of Nervous and Mental Diseases, Richmond, Va.* "In albuminuria of Pregnancy this water is one of the very best alkaline diuretics, and with milk diet, is one of my sheet anchors.

Edward M. Eidherr, M.D., Ph.D., Ch.D., Ph.G., *University of Vienna, Chicago, Ill.:* "I have found BUFFALO LITHIA WATER of undoubted service in the treatment of Uric Acid Gravel, Chronic Rheumatism and Gout."

Dr. William A. Hammond, *Surgeon-General (retired) U. S. Army, formerly Professor of Diseases of the Mind and Nervous System in the University of New York, etc., Washington, D. C.:* "I have had considerable experience with BUFFALO LITHIA WATER in the treatment of Bright's Disease. I have witnessed the Albuminuria of the affection, and also casts of the renal vessels, disappear on the use of the water, and this not only in a single case, but in several of which I have full notes. It must in these cases be taken in large quantities, and its use continued for a considerable time."

Additional Testimony Upon Request to the Proprietor, Buffalo Lithia Springs, VIRGINIA



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Buffalo LITHIA WATER

MEDICAL OPINIONS OF BUFFALO LITHIA WATER

Geo. Ben. Johnston, M.D., LL.D., *Prof. Gynecology and Abdominal Surgery, University of Virginia, Ex Pres Southern Surgical and Gynecological Assn., Ex-Pres. Virginia Medical Society and Surgeon Memorial Hospital, Richmond, Va.:* "Almost any case of Pyelitis and Cystitis will be alleviated by it, and many cured."

Dr. Lewis Bosher, *Richmond, Va., Professor of Surgery, Medical College of Virginia:* "I have frequently used BUFFALO LITHIA WATER with the *most satisfactory results* in all conditions where an active diuretic is indicated, and have found it especially serviceable in Rheumatic and Gouty Conditions, Albuminuria of Pregnancy, Catarrh of the Bladder, and other diseases affecting the urinary organs."

Dr. Stuart McGuire, *Richmond, Va., Surgeon in charge of St. Luke's Home Professor of Principles of Surgery, and of Clinical Surgery, University College of Medicine Richmond, Va., etc.:* "In cases of headache from lithæmia of headache from passive congestion of the kidneys, of strangury from concentrated urine, and a host of other ills, I always advise BUFFALO LITHIA WATER."

Dr. P. B. Barringer, *Chairman of Faculty and Professor of Physiology University of Virginia, Charlottesville, Va.* "After twenty years' practice I have no hesitancy in stating that for prompt results I have found nothing to compare with BUFFALO LITHIA WATER in preventing Uric Acid Deposits in the body."

Additional Testimony Upon Request to the Proprietor, Buffalo Lithia Springs, VIRGINIA

Announcement

By H. K. Mulford Company
Concerning the National Food and Drugs Law

The National Food and Drugs Law, which becomes effective January 1, 1907, requires the maintenance of the standards of the United States, Pharmacopeia, and the standardization of certain crude drugs and preparations thereof.

For years we have anticipated both the United States Pharmacopeia and the Food and Drugs Law, and have standardized all drugs and the preparations thereof requiring standardization in the eighth decennial revision.

In addition to those drugs the standardization of which is made obligatory, we offer a full line of standardized preparations of the following assayed drugs:

Blood Root, Buckthorn Bark, Capsicum, Cascara Sagrada, Cubeb, Digitalis, Ergot, Gelsemium, Ginger, Ignatia, Indian Cannabis, Kola, Lobelia, Mandrake, Quebracho, Rhubarb, Senna and Strophanthus.

The standardization of drugs not only requires a large force of competent chemists and a well-equipped scientific laboratory, but years of preparation and painstaking work. We cheerfully comply with the requirements of the National Law, since for years we have employed a force of scientific experts for standardization and research work.

All preparations made by the H. K. Mulford Company will conform strictly to the new National Pure Food and Drugs Law. Preparations with official names will strictly conform to the United States Pharmacopeial standards. All other preparations will conform to the standards stated in our price-list 1907 Edition—standards established by expert chemists of high standing, and which, in the opinion of the scientific world, are most liable to be adopted by the Committee of Revision when assay methods for such drugs are incorporated in future editions of the United States Pharmacopeia.

The general management and ownership of the business of the H. K. Mulford Company are controlled by graduates of pharmacy, and we accept full responsibility for every preparation bearing our label, the following being a copy of the guaranty which will appear on all products of our laboratory:

"Guaranteed under the Food and Drugs Act, June 30th, 1906. **Guaranty No. 172."**

H. K. MULFORD COMPANY

Philadelphia, December 1, 1906

SELECTIONS

The Chemistry of Digestion.—Dr. Chas. D. Aaron (Detroit Med. Jour.) says: "Pawlow has proved that the reaction of the food influences the closing and relaxation of the pyloric sphincter. Free hydrochloric acid in the stomach opens the pylorus. This acid acting on the intestinal mucosa reflexly closes the pylorus. Just as the pylorus closes, the pancreatic juice and bile gradually neutralize the acid chyme and this allows the free acid in the stomach to again open the pylorus and a new supply of the stomach contents enter the duodenum. On account of this great acidity the intestine is never overburdened with too much food at one time. Just as soon as a certain amount of the acid stomach contents enters the duodenum the pylorus closes to prevent any more from passing through until the pancreatic juice has had time to act upon the food in the intestine. Proteids take up a great deal of hydrochloric acid and require a longer time to give a reaction for free hydrochloric acid than the carbohydrates. For this reason the pylorus opens sooner after a carbohydrate diet than a proteid diet. This knowledge is extremely valuable to us in the treatment of disease. In cases where hydrochloric acid is secreted in insufficient quantitity the patients are susceptible to diarrhea. We reason that when the pylorus relaxes and allows the stomach contents to empty itself into the duodenum, there is not enough acid in the duodenum to reflexly close the pylorus, and thus the duodenum is over-burdened and the intestinal mucosa is irritated, which leads on to a condition that superinduces a chronic diarrhea. The acid chyme poured into the duodenum stimulates the flow of the pancreatic juice. The emulsification of fat in the intestine can only take place in an alkaline medium."

Pyrenol.—Eulenburg's "Encyclopadische Jahrbucher der gesamten Heilkunde," 1906, says: "It continues to demonstrate its trustworthiness, especially in bronchial asthma and pertussis. It prevents pulmonary complications and loosens expectoration, as for instance in bronchial catarrh. In angina pectoris it exercises a sedative effect. It can be used in phthisis cases, but it may be well to avoid it if hæmoptysis threatens."

The first application of

Resinol Ointment

in itching and irritable conditions produces a feeling of comfort to the sufferer never before experienced.

It is the standard remedy for Eczema and acute inflammations of the skin and muco cutaneous margins, and is a superior dressing for Burns, Boils, Skin Abrasions and superficial wounds and sores.

IT IS THE RECOGNIZED SPECIFIC FOR PRURITUS ANI, ITCHING PILES, ETC.

As a nutrient Soap for the Skin

Resinol Soap

is without a parallel.

It nourishes the underlying tissues, prevents congestions and eruptions, obviates waste and atrophy, thus preventing wrinkling and cracking of the skin. It is superior to all others for the Hair and Scalp.

SAMPLES SENT ON REQUEST.

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Eye Treatment using Fluid Applicator No. 12.

WRITE US TODAY or ask your Supply House to show you

The Physician's Vibragenitant

—— AND ——

The Fluid Vibratory System,

a true Vibrator giving harmonious vibrations that effect vital processes because they are natural vibrations. Don't confuse true vibration and pounding, for one produces the results you expect, and the other produces——

Our FLUID VIBRATORY SYSTEM enables every physician to treat sensitive parts safely and well. Complete outfit $75.00 others from $40 00 up. Send for full particulars and valuable information at once.

Treatment of the Eustachian Tubes with Fluid Applicator No. 10.

SAM J. GORMAN & CO., Vibratory and Mechanical Specialties for Physicians, **153 S. Jefferson St., Chicago, Ill.**

Merck's Merits in the Manufacture of Morphine

THE work of Seguin (1804), of Serturner (1805), of Dumas and Pelletier (1823) was scientific to the highest degree. For the sake of knowledge they investigated perseveringly until MORPHINE was thoroughly defined.

E. MERCK, personally acquainted as he was with investigators, shared their enthusiasm. In addition to their erudition, he had the foresight to recognize the importance of MORPHINE to medicine and, despite the advice of more conservative friends, he undertook the manufacture of MORPHINE as early as 1827.

The clearness of his foresight and the wisdom of his step were quickly proved by the host of other manufacturers who, after witnessing his success, could without risk to themselves follow MERCK'S lead.

Specify MERCK'S on your prescriptions for **MORPHINAE SULPHAS**

TANPHENYFORM

WARNER & CO.

KNOWN PREVIOUSLY AS TANFORMAL.

Energetic, Intestinal, Astringent and Antiseptic.

Liberates Tannic Acid, Phenol and Formaldehyde, due to a gradual and continuous chemical reaction, as soon as it comes in contact with the Alkaline intestinal secretions.

CONTROLS the DIARRHEA of TYPHOID FEVER and other infectious diseases and inhibits the development of the micro-organism and astringes the congested and inflammed mucosa, including the infected and ulcerated peyer's patches, thus, it greatly limits the possibility of hemorrhage and perforation.

Does *not* disorder digestion *nor* derange the stomach, is eliminated by the bowels and kidneys.

The following clinical report from a Physician in Kansas illustrates its exceptional Therapeutic value.

"TANPHENYFORM (Tanformal) controlled diarrhea in Typhoid when everything else failed."—DR. G————

SAMPLE TO DOCTORS ON REQUEST.

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Branches: New York, Chicago, New Orleans.
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SELECTIONS

Treatment of Puerperal Fever with Anti-Streptococcus Serum.—Ed. Martin considers the two new forms of treatment for puerperal sepsis that have come into vogue during the last few years: ligation of the vessels or total extirpation of the uterus, and the use of serum injections. The operative procedures are possible only in hospitals, while the serum can be easily employed by every practitioner. The author has employed the serum of Menzer in the following manner: As soon as the rectal temperature exceeds 38.5° the secretion of the uterus is examined microscopically. If no gonococci are found, 20 c. c. of serum are given at once. If the temperature still remains above 38° on the following day, another dose of 20 c. c. is given, and, if necessary, a third one on the day after. If the fever persists beyond the sixth day, another course of injections of 20 c. c. each is given for three days. No cases were treated where there was an extension of the process to the tubes, parametrium, or along the veins. The action of the serum was on the whole very favorable, since the patients treated did not have such high fever and were not sick for so long a time as those who did not receive any serum. Two patients died despite the use of the serum, but these suffered from an exceptionally severe form of sepsis. Bad after-effects were not seen, and the slight eruption which occasionally developed disappeared in a short time. The largest amount injected was 120 c. c. —Berl. klin. Woch., July 16, 1906.

Iothion has been employed with marked success in the treatment of late or tertiary syphilitic lesions of the skin, mucous membranes and bones. Favorable results are also reported from its use in the treatment of chronic inflammations of the joints, periostitis, glandular swellings, epididymitis, lupus and parasitic affections of the skin, endometritis, pruritus vulvæ and esysipelas. As an application to mucous membranes it is recommended in the treatment of gingivitis, stomatitis, alveolar periostitis and syphilitic lesions of the mouth and pharynx.

In cases in which it is desirable to obtain the more intense constitutional effect of the iodides it has been found an excellent plan to administer sajodin, which is devoid of the unpleasant and injurious features of the iodides, internally in connection with the local use of iothion.

Milk Delusions.—The veteran milk producer, Dr. E. F. Brush, in an interesting little brochure on this subject, says: "Chemically treated milk is in fact embalmed, if there has been enough of the lethal agent added to kill every living microscopic germ in the milk. To a limited extent, this statement holds good with milk that has been sterilized or pasteurized. Of course, sterilizing and pasteurizing does not permanently embalm the milk, but both of these processes kill it. Permanent embalment of a food would mean a total resistance to all digestive processes, as well as to all other biological changes. So I reaffirm what I have so many times affirmed, that fresh, clean living milk from healthy well-cared for cows, is the best food for an infant deprived of the milk of a normal healthy mother. And I say now, with all that is within me, believing that I know the truth of what I say, human ingenuity can never concoct or assemble together nutritive elements that we know are required to properly nourish a baby, in such a manner as to form a perfect food to feed a young child. If these conclusions are correct, then the modifying and otherwise bringing together nutritive elements that are not combined vitally is one of the milk delusions still prevailing. * * *

"But just now, for the first time after all the years that I have been studying and watching the production of milk, especially for infants, I see a gleam of sunshine, in fact the first evidence of common sense, when Dr. Darlington, the present Health Commissioner of New York City, ignoring chemists, sanitarians, and theorists, is simply sending his own men to the dairies to see for themselves what the milkmen are doing, whether they are allowing dirt to get into the milk, are adding chemicals or infecting it directly by diseased cows. And also demanding the dealers to label 'sterilized,' 'pasteurized' and 'preserved milk.' If this kind of supervision is continued by the present Department of Health of the City of New York there will be less milk delusions, killing thousands of infants—*'Secundum artem.'*"

Used Dolomol-Ichthyol 10% in ulcers of the lower limbs with excellent results.—J. Michaelis, M.D., Brooklyn, N. Y.

Cram's Quick Reference Atlas and Gazetteer of the World, edited by Dr. Eugene Murray Aaron, is a most useful and handy li tle book for the desk.

SELECTIONS

For Protection of Health.—Dr. Eugene H. Porter, State Commissioner of Health, gave an address upon the work and scope of the State Department, and the changes that should be brought about for the protection of the public health at Syracuse October 25. He said there were now in this State 1,427 health officers. Dr. Porter said that the appropriation last winter was only $75,000 for the work of the department. Pennsylvania last year appropriated $350,000 for its health department.

During the last two months 154 cans of 138 kinds of meats and meat products have been examined microscopically, physiologically or chemically for the purpose of determining the extent to which such products are poor in quality or of varying nutritive value and also to ascertain the extent to which preservators were used in their preparation.

During the past summer the department has been thoroughly investigating a large number of summer resorts in the State. Personal investigations into the sanitary conditions of the buildings, the water supply, the method of disposal of the sewage have been made of a large number of hotels and boarding houses. A blank form which, when filled out by the owner or proprietor of the hotel or boarding house gives full information regarding the sanitary conditions, has been mailed to hundreds of different hotels, and much information has been secured.

The importance of this work can be best illustrated by citing a few instances of what has been discovered. In one hotel on Lake George the sewage from the hotel is being discharged in the lake but a short distance away from the intake which supplies the hotel with water. A hotel in the Thousand Islands but a short time ago was taking its water supply from a bay in which there was little or no current, and into which the sewage from hotels accommodating hundreds of people was discharged. A hotel on Long Island was found where the sewage from the hotel was discharged into a series of cesspools placed along the front of the building, directly under the windows of the rooms occupied by guests. The cesspools were but scantily covered, and the ground is saturated with filth.

The water supply has received particular attention, and the department has learned with pleasure that in the better class of hotels and boarding houses considerable attention is being paid to this subject by reason of the fact that the guests are insistent upon having a good water supply.

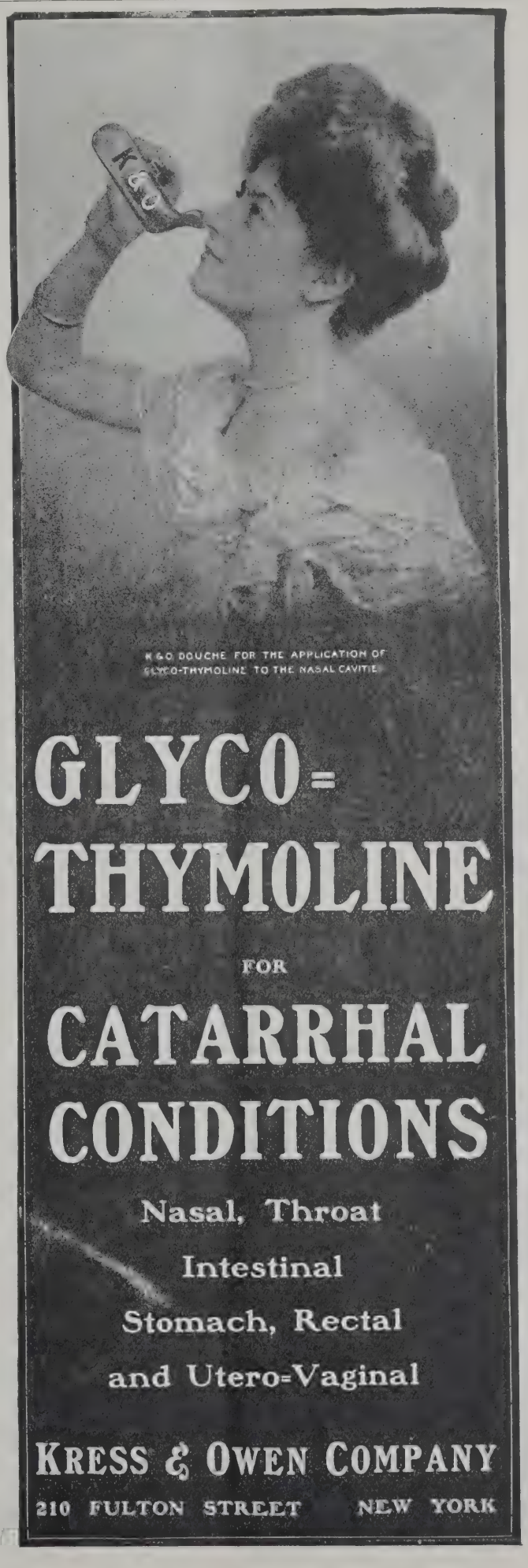
It is the duty of every medical society in this State to take definite measures at short intervals to put before its immediate public, in an attractive and convincing way, the latest and best teachings of modern sanitation. And I may add it is a duty that is especially ours as health officers of the State.

The policy of the department will be as stated at the last conference at Albany. The continued pollution of our lakes and streams must cease. No town or municipality will be allowed to discharge raw sewage into any body of potable water without the most cogent reasons. But by this it is not meant that in a moment the previous policy of the State shall be revolutionized nor to purify at once all our waters. All that we may expect to do is to continue the beginning already made, going forward with increased energy of purpose.

There are several things the State could or might do but there is one thing it must do if it is to educate and safeguard those who need it most. That is to insist upon the registration of all cases of tuberculosis.

The department has already prepared some special circulars of instruction for the people on the communicable diseases. The one on tuberculosis is particularly full. I trust it may meet with your approval when I say that it is my intention, beginning January 1, 1907, to ask every health officer to make a definite and specific report of all cases of tuberculosis occurring within his jurisdiction.

The Local Treatment of Various Catarrhal Affections.—Dr. M. R. Dinkelspiel says: "I find Glyco-Thymoline of value alone in many cases, and a valuable adjunct in all cases. I use it constantly as a mouth wash in cases of secondary syphilis, in mercurial pytalism, in diphtheria, and as a mouth wash throughout many of the acute infectious fevers. In these cases of course it is simply a very valuable adjunct, while in some cases of rhinitis I have found it almost a specific. The impunity with which it may be applied and administered, its blandness, its stimulating local effect when hot and its alkalinity, make it a valuable substance to have in the office as well as in the homes of patients."



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It Does the Business and Never Gripes

KEEP IT ON HAND

ABBOTT'S SALINE LAXATIVE is an ideal refrigerant, anti-ferment, ant-acid, laxative or cathartic, according to dose and conditions. Its use freshens the digestive tract, purifies the blood and aids all other desirable treatment by clearing the field for action. It is pleasant to take, prompt to act and never irritates.

Abbott's Saline Laxative is often substituted (tho' never successfully) by unprincipled druggists. Always specify as above, and see that you get it. Our absolute guarantee is behind every pound. It may be obtained, for office dispensing, of any jobber or direct from our laboratories. Price, in full dozens, $4.00 (retail price, 50c). Delivery prepaid for cash with order.

DOCTOR: If you are not using Abbott's Saline Laxative you are making a mistake. If you continue to neglect it, your mistake will be perpetuated and your own loss will grow steadily greater. There's nothing like it. It is going by the ton. Try it on our say so! Money back if not satisfied.

Abbott's Salithia: Special eliminant in autotoxemia of the rheumatic diathesis and obesity. Same base, C. P. "epsom salts" with one grain of lithium carbonate and gr. 1-250 of colchicine added to each 90 grains—a heaping teaspoonful. Same size and style of package; same dose—q. s. Per full dozen, $5.00; retail price, 75c.

SAMPLES and Descriptive Booklet on request. A full-size package, as illustrated, will be sent to any physician, for personal use and introductory trial, on receipt of 25 cents in stamps; Salithia, 35c; both once only.

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Valentine's Meat-Juice

For its **Ease of Assimilation, Power to Sustain and Nourish,** and its **Acceptability to the Stomach,** when other foods are rejected, the **Concentrated, Rapid Blood-Making Nutrient,** Valentine's Meat-Juice, is extensively employed in the treatment of

Influenza and Pneumonia.

J. E. Buchanan, M. D., *Professor Gynæcology, Homœopathic Medical College Missouri, St. Louis:* "I have been using Valentine's Meat-Juice successfully for a long time in my practice, and am using it now as the best available food in the treatment of Influenza."

John L. Daniels, M. D., *Visiting Physician Metropolitan Hospital, New York:* "We have given Valentine's Meat-Juice quite an extensive trial. It is agreeable to the taste, and in cases of debility has proved a valuable adjunct to our therapeutic agencies. I have found Valentine's Meat-Juice very useful in the treatment of Pneumonia with irritable stomach."

Physicians are invited to send for brochures containing clinical reports.

For sale by American and European Chemists and Druggists.

VALENTINE'S MEAT-JUICE COMPANY,

Richmond, Va., U. S. A.

VALENTINE'S
PREPARATION
TRADE MARK
NUTRIO PERMIE
MEAT JUICE.
The result of an Original Process of Preparing Meat, and extracting its Juice, by which the elements of nutrition (most important to life) are obtained in a state ready for Immediate Absorption.
DIRECTIONS.—Dissolve one teaspoonful of the Preparation in two or three tablespoonfuls of cold or moderately warm water. The Use of Hot Water changes the character of the preparation.

THE SEX CYCLE OF THE GERM PLASM.

Its Relation to Sex Determination.

BY THOMAS E. REED, M.D.

PART IV.

A NUMBER of years ago in a small volume, now out of print, this theory of the determination of sex was briefly outlined.* We called attention at that time to the importance of taking into account, in considering this question, the general periodicity of functional change throughout the organic world. We believe that sex is not so much a morphological as it is a physiological distinction. Theorists have devoted too much attention to structure and not enough to function. Now we know that in all organic life one may note through long continued and close observation, progressive change. This change is both structural and functional. It is progressive, but in any one direction it is not constant. There is a fluctuation backward and forward, a swinging of the pendlum from one side to the other of a mean, or a movement forward and a rest. For a structural change in a living organism to take place there must be a preceding functional change. This functional change in all probability arising from a structural change in some more basic tissue and so on back. It is thus impractical to attempt to disassociate structure and function. As we approach the simple cell they probably synchronize. At first thought or to the average man the morphological distinction between the sexes is the real distinction, but what we wish to call attention to is the underlying and essential distinction. We are not dealing in the obvious.

Of structure and function we may say that function is in general the most susceptible to variation. Its variation is at once the most dependent upon, and in some respects, the most independent of environment. There are some hereditary rythms of function in all life cells whether simply or complexly arranged, that seem to bear like the germ plasm, a charmed existence so that nothing short of the destruction of the organism itself suffices to break their continuity.

In the first part of this paper a number of reasons were given for holding the view, that the germ plasm is primarily hermaphroditic, containing all the elements of both sexes, that this condition is not lost even in the developed organisms; that morphological sex distinction is the result merely of a tendency on the part of the developing organism to functionate more actively in one direction than another; and that this tendency is conferred upon it at the moment of fertilization by the spermatozoon.

Now knowing that all functional activity displays a strong tendency to periodically fluctuate first to one and then the other side of a mean, it would be unreasonable to suppose that the germ plasm does not follow this universal law, or that it occupies a position of fixed equilibrium between male and female tendencies. On the contrary there is every reason for believing that the germ plasm is in a state of constant fluctuation from one sex extreme to the other. Structurally possessing the elements of both sexes, the ovum undoubtedly at one time by a slight functional change is actively female, but soon by an equal and opposite reaction functions as male. Attention has already been called to the very suggestive fact that this is actually what does occur in some hermaphroditic animals, in some, where the sex organs are the same, or in others where the same individual possesses both sets of organs the sperms and ova are secreted alternately as in the group streptoneura of the snails, and in oysters and clams. In regard to this fact Geddes and Thompson say: "If the hermaphroditism be very intimate, that is if the seats of ovum and sperm production be very close to one another it is not to be expected that the development of two kinds of cells will go on simultaneously. Such, indeed, would be a physiological impossibility. Antagonistic protoplasmic rythms may rapidly alternate, but cannot coexist. Whether hermaphroditism be anatomically intimate or not there is throughout a tendency toward periodicity in the production of male and female elements."*

What could be more intimate than the hermaphroditism of the germ plasm of the ovum; and hence is it unreasonable to suppose that there must necessarily be a sex rythm in the germ plasm just as there is in other primitive hermaphroditic organisms? At the same time does it not seem vain for man to think that he may some day succeed in altering this hemaphroditic character of the germ plasm, basic as it is, conferring upon it a male or female sexuality, by some system of altering the nutritition or otherwise exciting variations in the parent organisms? As Weismann and his followers have long insisted, the germ plasm leads a charmed existence. We may destroy it, but we cannot change its structure or modify the interplay of forces within it.

It has been shown that sex is determined at the fertilization of the ovum. If we then admit this sex cycle of the germ plasm we must admit that the future sex of the embryo depends upon whether fertilization takes place during the male or female period of the cycle. One thing we believe to be certain: if the determination of sex does not depend upon the time of fertilization or union between the sexes, it is as hopeless for man to think of controlling it as it would be for him to think of changing the orbits of the planets.

Since we cannot disturb this rythm of the germ plasm the only method of determining the sex of the embryo is to take advantage of it. We believe that a period of approximately twelve hours is occupied by the germ plasm in making one complete revolution from the beginning of the female variation through the male and back again to the female, each sex manifestation thus occupying a period of six hours. These periods constitute two phases of the complete cycle. They may approximately be designated the katabolic and the anabolic, from their probable embodiment of the great katabolic and anabolic distinction between the sexes in general, or the active and passive as typifying the distinction in activity between the two sexes, which can be traced with more or less facility in all bisexual organisms, or they may be termed positive and negative as representing the positive character of the male and negative character of the female.

Is this active character of male and passive character of female organisms a real or only an apparent distinction? We believe that it is a real one and a very basic one at that, having in all probability given rise to distinctions which are now more obvious. It is at least a phase of sex that has attracted the attention of biologists to a greater or less degree for some time. Thompson, in his *Zoology*, calls attention to it, and later, in conjunction with Professor Geddes, in *The Evolution*

*Cyclic Law. T. E. Reed, 1897.

*Evolution of Sex, Chap. VI.

of Sex, dwells upon it at greater length. Thompson says in this respect: "Most animals are either males or females, the former liberating actively motile elements or spermatozoa and the other forming and usually liberating passive egg cells or ova."

Any one who has had the opportunity of observing the products of the male and female organism beneath the microscope needs no long description to emphasize this marked difference in activity. This writer further says: "All through the animal series from active infusorians to passive gregarines, from feverish birds to the more sluggish reptiles we read antithesis between activity and passivity, between the lavish expenditure of energy and the habit of storing. The ratio between disruptive (katabolic) processes and constructive (anabolic) processes varies from type to type. We believe the contrast between the sexes is another expression of this fundamental alternative of variation."* In Chapter II. of *The Evolution of Sex* many instances illustrating this important fact of the inherent activity of the male and passivity of the female are cited. They say: "The female cochineal insect ladened with reserve products of the well-known pigment spends much of its life like a mere quiescent gall upon the cactus plant. The male on the other hand in his adult state is agile, restless and short lived. Now this is no mere curiosity of the etomologist, but in reality a vivid emblem of what is an average truth throughout the world of animals—the preponderating passivity of the females and the predominent activity of the males. These coccus insects are martyrs of their respective sexes." In the fourth chapter of this same work where the question of the determination of sex is discussed this view is again emphasized. They continue "such conditions as deficient or abnormal food, high temperature, deficient light, moisture and the like are obviously such as would tend to induce a preponderance of waste over repair, a katabolic habit of body, and these conditions tend to result in the reproduction of males. Similarily the opposed set of factors such as abundant and rich nutrition, abundant light and moisture favor a constructive—*i.e.,* make for an anabolic habit of body and these conditions result in the production of females. This is not all, however. The above conclusion is indeed valuable, but it acquires a deeper significance when we take it in connection with the result of the previous chapter. There it was seen as the conclusion of an independent induction that males were of smaller size, more active habit, higher temperature, shorter life, etc., and that the females were larger, more passive, vegatative, and conservative forms.* Theories of inherent maleness or femaleness where rejected since practically nearly verbal: more accurately, however, they have been interpreted and replaced by a more material conception which finds the bias of the whole life, the resultant total activities to be predominence of the protoplasmic processes, either on the side of disruption or construction. This conclusion has still to receive cumulative proof, but one large piece of evidence is forthcoming, that namely of the present chapter. If influences favoring katabolism make for the production of males and if anabolic conditions favor females, then we are strengthened in our previous conclusion that the male is the outcome of predominent katabolism and the female of equally emphatic anabolism." It will be seen from this above quotation that these authors incline to the view that sex can be influenced by the nutrition of the parent organism. We have shown that at least as far as the higher animals are concerned this view is to be discredited. It is desirable that attention be more particularly directed to the rejection by them of all theories of "inherent maleness, or femaleness," and their advocacy of the view upon which this theory to a degree depends and with which we have attempted to impress the reader, namely that maleness is the outcome of katabolism and femaleness of anabolism, or as we have summed it up the essential distinction between the sexes is functional rather than morphological. This being the case, we should suppose that the sex cycle of the germ plasm might resemble in some way, or present an analogy to the anabolic and katabolic cycle which is constantly present in multicellular organisms. This is undoubtedly what really does occur and it is plainly unnecessary to postulate some mysterious interplay of cellular forces, when we have at hand this cycle of metabolism so plainly manifested in all animal life from the simple cell up to man himself; and especially when it has been shown that these conditions of anabolism and katabolism, passivity and activity, are so extremely typical of the sexes. The sex of the embryo is determined simply by the period through which the germ plasm happens to be passing when fertilization takes place. If it is katabolic the embryo is male and in common with the rest of the sex the developed organism exhibits katabolic qualities; if the ovum is passing through an anabolic stage the opposite sex is the result.

As explanation of why a period of twelve hours is taken as the length of this metabolic cycle of the germ plasm is now in order. We have already spoken of the general functional periodicity which can be observed in nearly all animal life. As long ago as 1843 Dr. Laycock in an article in the *Lancet,* after citing a number of examples of vital periodicity, comes to these conclusions: He held that there is a general law of periodicity regulating the vital movements in animals; that the approximate periods within which these movements took place could be calculated; and that this unit must be considered one day of twelve hours. He believed further that the lesser periods were simple and compound multiples of this unit in a numerical ratio analogous to that observed in chemical compounds and that the fundamental unit of the greater period was one week of seven twelve-hour days, equal to one-half of a calendar week. While these assertions are rather dogmatic it would seem that in so far as this period of twelve hours and seven half days are simple divisions of the month they are important. Taking the mean lunar month of twenty-eight days and dividing it, we have as important periods the two weeks or fourteen day period, one week, three and a half days or seven twelve hour periods, and finally the shortest cycle of twelve hours. The longest cycle or one month corresponds to one revolution of the moon, from the perigee to apogee and back to perigee, or a complete cycle of spring and neap tides, while the twelve hour cycle represents one complete ordinary tide cycle corresponding to the upper and lower transit of the moon. Whatever we may assign as the cause, it does seem that many vital phenomena fluctuate in an approximate correspondence with

*J. Arthur Thompson—*Outlines of Zoology,* Chap. IV.

*In the course of the article on "Sex," *Encyclopedia Brittanica,* Thompson explains menstruation as the "means of getting rid of an anabolic surplus in the absence of its fœtal consumption."

the above designated periods.

For a number of generations it has been noticed that infectious fevers present certain periodic fluctuations. We have been in the habit of noting these periodic changes in many forms of acute disease. In some it seems to be more easily recognized than in others. The ones where it is the most easily observed are those which depend upon a bacterial infection. In very acute diseases we have noted that the termination of a full week generally brings a critical day. A distinct change usually occurs either for better or worse at that time. To a lesser degree this is true of the end of the three and a half day period. Convalescence is often established at the end of the first or second week, or when death takes place it is more likely to occur on the seventh, fourteenth, or twenty-first day, or perhaps the fourth, eleventh, or eighteenth and so on. These changes in the character of the symptom complex are not perhaps so noticeable to the general practitioner, as they would be were all diseases allowed to run their natural course. The day of twenty-four hours is the pathological period most generally observed by physicians. Some disease symptoms do seem to be regularly aggravated or lessened at certain times of the solar day, but we believe this to be due to some daily regulation in the habits of the patient, rather than to any other influence. We believe that a gain would result from the adoption of the twelve hour cycle, as the shortest pathological period, then three and a half days, seven days, two weeks, and one month.

The incubation of the infectious and contagious diseases seems to vary considerably since the resistance of the patient may be so great as to prolong it over what would be its usual period, but we find that on an average it is limited to these periods; that is, three and a half days, seven days, ten and a half days, and two weeks.

Menstruation probably depends upon the lunar month. Dr. C. A. L. Reed says of this function: "It may be that the function of mensturation will disappear in the course of years, but in its waning recurrences it will still be cyclical in its manifestations. It is a law of life and of all activity.

The respiratory movements are rhythmic and by a deeper breath at every seventh respiration we graft rhythm upon rhythm. There is a recurrence of hunger and thirst and a propensity to sleep, which is not in exact correspondence with the needs of the organism. In healthy persons of both sexes there is a diurnal tide in the pulse rate, the respiration, the arterial tension, and the temperature. More than one observer has come close to a demonstration of that which is inherently probable, a tidal movement in the adult male of the human species, during which all vital processes and the sexual appetite reach a climax and then decline: so that the question has been seriously raised whether it is not true that men menstruate as well as women; and if we take the next step from the physiological to the pathological we find the same inexorable law of rhythm in the periodical recurrence of malarial paroxysms which the discovery of the plasmodium has not fully explained, of epileptic seizures, of maniacal crises, and in the characteristic fever curve of the infectious diseases. Even in the highest intellectual activity we find the same law for the creative power of genius has its ebb and flow."*

*A Text Book of Gynecology. C. A. L. Reed.

Havelock Ellis has called attention to the possibility of the existence of a rudimentary menstrual cycle in man."†

As menstruation corresponds to an increase of activity in the organs of generation in the female, should there be such a cycle in the male, it would probably be represented as suggested above, by an increase of sexual desire. Now this corresponds closely to the facts. There is in man such a monthly cycle, but upon this is grafted lesser cycles of one week, and three and a half days' duration. Menstruation in woman occurs on an average every twenty-eight days; should there be a delay it is usually three and one-half days or one week in duration. The average duration of the flow is three and one-half days.

This dependence of many phenomena of animal life on the month is very marked. The average time occupied in hatching the eggs of many species of insects is three and one-half days. In some insects the period is one week and a half, as for example, the black caterpillar. Others require from two to six weeks. The larvæ period of the bumble bee is exactly seven days, the moth six weeks, and the common black caterpillar six weeks. The wood piercer bee is in the larvæ state four weeks. The hen lays eggs for three weeks and sets on them three more.* The goose lays for two weeks but sets four. The pigeon sets for two weeks after having laid eggs two weeks. The period of incubation for the ostrich egg is exactly six weeks after four weeks of laying. In the higher mammals there are so many conditions which may retard or hasten birth that the period of gestation is not very accurately determined. Where it is, we generally find it limited by a definite number of months or weeks. Dr. Laycock in one hundred and twenty-nine species of birds and animals found only four exceptions to this rule, while sixty-seven were rigidly exact. This periodicity which we find to be so intimately connected with the month, and running in periods evenly divisible by the twelve hour period, which we know constitutes one complete tide cycle, was noted by Charles Darwin. A hint is let fall in *The Descent of Man* that is pregnant with suggestion. He says: "All vital functions tend to run their course in fixed and recurrent periods and in tidal animals the periods would probably be lunar, for such animals must have been left dry or covered deep with water, supplied with copious food or stinted during endless generations at regular lunar intervals. If then the vertebrata are descended from an animal allied to the existing tidal ascidians the mysterious fact that with the higher and now terrestrial verterbrata many normal and abnormal vital processes run their course according to lunar periods, is rendered intelligible. A recurrent period, if approximately of the right duration when once gained would not, as far as we can judge, be liable to be changed, consequently it might thus be transmitted to almost any number of generations. This conclusion, if it could be proved sound, would be curious, for we

†Man and Woman, Chap. II. Havelock Ellis. Scribner's Contemporary Science Series.

*Albini found that hens after separation from the cock for the first week laid nothing but fertile eggs, but on the ninth and tenth days both fertile and infertile eggs were laid. On the twelfth day all the eggs were infertile, but fertile eggs would again show and were laid even as late as the eighteenth day. From which we gather that the days having the highest average of fertility were approximately the seventh and fourteenth.

could then see that the period of gestation in each mammal and the hatching of birds' eggs and many other vital processes still betrayed the primordial birthplace of these animals."*

If we assume with Darwin that the vertebrata are descended from some tidal animal, which, as he says, must have been subjected for many millions of generations to such marked alterations in its environment as a complete immersion in sea water followed by a complete exposure to the air and sunlight in periods six hours in length, synchronizing perfectly with the incoming and outgoing tide, we must admit the possibility of the rhythm then established, being maintained by heredity through as many more generations of cells even though they may not be subject to the same conditions as the ancestral cell. That it is still maintained in the germ plasm should seem all the more plausible when it is remembered that many functions and vital phenomena of the fully developed organism still display this tendency, as has been shown, to run their courses in more or less definite lunar intervals. It is generally believed by evolutionists that the beginnings of life on this earth were first manifested in sea water: but there must have been a period when in the migration of life from sea to land these animals inhabited for countless millions of generations the tide ways and shore, for it is inconceivable that any species could survive the sudden change from water to land. Now what effect would this alternate immersion and drying in these tideways have? Would it not produce on these primitive cells alternate active and passive, or anabolic and katabolic effects, states which we see perpetuated in the two sexes even to this day? Flood tide would be a period of activity, of seeking for food, of excretion, of ingestion, of avoiding enemies, of darting here and there, or in earlier times, perhaps as we see the simple cell to-day, floating in the water and rejecting or seizing and assilitating different bits of food which may happen to drift in its direction. On the other, the ebb tide marked a period of passiveness or anabolism, gorged with food which is now building up the organism, immobile and passive, the primitive cell rests upon the surface of the sands or vast marshy tracts of land, very much as Prof. Thompson describes the female cochineal insect as resting passive, sluggish and immovable upon the cactus plant.

Could any conditions be imagined which would create in the cell periodic cycles, typifing more vividly the states which biologists have found to constitute the essential distinction between the sexes?

A CONSIDERATION OF THE NERVOUS SYSTEM.

BY F. B. BRUBAKER, M.D.

PART II.

HAVING proceeded thus far with a rather lengthy argument as it pertains largely to an examination into the conditions upon which the life of individuals relative to the vegetable kingdom belongs, let me now ask the question, why it is that a mule can be taken into a coal mine and kept there far removed from the direct rays of the sun for a period of years, and no member of the vegetable kingdom can possibly be kept under like circumstances, search as we may the world over? The reason is, because the mule possesses a nervous system.

*Descent of Man, Chap. V.

In the Medulla Oblongata there exists nerve cells which exert a constant influence over the activity of vascular muscles. These groups of nerve cells which compose the vascular nerve centres may be divided into motor and inhibitory. From these centres emanate impulses of two kinds, the one increasing the action of the contractile elements, and the other diminishing it. They are intimately connected with the centres which preside over the functional activity of various viscera, and are also closely related to the nerves coming from all parts of the circulatory apparatus. Direct communication between these vaso-motor and vaso-inhibitory centres and the blood vessels is kept up by means of efferent nerve channels, some bearing stimulating (vaso-constrictor) and others inhibitory (vaso-dilator) impulses. The activity of the contractile elements may be altered by influences from different sources. Central influences from the medulla are habitually in action affecting all the vessels and keeping up the vascular tone. These impulses are variously modified by changes occurring in distant parts of the circulatory apparatus and can be regarded as a general regulating mechanism. They pass through the sympathetic chain. Special influences which are associated with the functions of the different parts and organs are only called into operation during the performance of the function whatever it may be. These impulses are undoubtedly conveyed by the same nerves that excite the various forms of functional activity. Section of a sensory nerve causing temporary vaso-motor paralysis owing to the tonic constrictor influence being cut off. Stimulation of the peripheral stump causes vaso-constriction from excitation of the fibres bearing these impulses. The stimulation of a motor nerve causes an increase in the flow of blood through the muscle, *i. e.*, is associated with a vaso-dilator effect probably dependent on the inhibitant influence of certain efferent fibres which check the local vascular agencies. Thus we must suppose that there exist local agents under the control of the medullary centres and that there are distinct sets of efferent, exciting and inhibitory fibres, passing between the centre and periphery. One set of the same lies in the ordinary functional nerve of the part, and the other lies in the sympathetic which runs along the vessels themselves and forms intricate networks, but so far as we know there are no local agents other than the muscles in the wall of the vessels and impulses from the centres which can stimulate or inhibit the activity of the local agents, travel by different fibres, and all the observed phenomena can be explained even without supposing local nerve centres to exist.

If, now, we should return to our illustration that an adult mule can be taken under ground, far removed from the direct influence of the sun's rays, and live and work in the same situation for a period of ten years, let us say, and that no member of the vegetable kingdom can possibly survive under similar circumstances, and if we will remember that in our former illustration of protoplasm in which we found that there exists no material difference between that of vegetable and that of animal life, and, further, that the external conditions of light, heat, water, etc., which becomes ultimately internal and a part of the life power of protoplasm itself, we naturally ask the question, and just as naturally reply, that the mule by possessing a nervous system and also by reason of its food, which,

by conisting of organic matter, is nothing more than stores of suns rays, these, I say, by being liberated under ground in the mule's stomach, and their distribution being attended to as well as their liberation by reason of the mule's nervous system, so far also differs in no material way from what the plant above ground, growing, let us say, at the very mouth of the mine, receives in a direct manner from the sun. So that whether we look to the vegetable, or, on the other hand, whether we observe the animal, we find that the liberation of heat by the metabolism of the protoplasm of the cell and in the presence of water, which is carried to the mule, but which the plant derives from the soil together with the nutritive principles which in the one case is taken direct from the soil and is inorganic, and in the other is liberated in the stomach of the mule and is immediately organic, and in each case carried by the circulation of water laden with these distinctive food principles to the protoplasm of the cell. In the case of the vegetable, therefore, whatever molests or interferes with the regular and constant continuance of these very principles produces the death of the individual. It matters little whether it be light, or heat, or water, or insufficient food as it is found in potash, nitrogen, iron, etc., which constitutes the plant foods. Neither, on the other hand, do I care whether this interference is from lack of sun rays, or lack of food in the soil, or produced by parasites, it is always constant, it is the same, it is final. If a plant rooted in favorable soil is surrounded with proper light and heat conditions; and, if by reason of the rain, sufficient water is regularly showered upon it, and it be free from parasites, it lives, if not, it dies. The action is always upon the protoplasm of the cell, *the living cell* because the heart of a tree which is only dead cells, so to speak, may be eaten away and the tree still live and bear fruit, but when living cells are attacked and sufficient protoplasm destroyed or an interference with any of the above processess takes place, the tree dies. But for the mule it is different. While an interference with these very processes as for the plant will cause the death of the mule, only in a different manner, of course, by reason of which the necessary conditions are somewhat changed, yet starvation for the mule is no less death for it, than starvation for the plant by lack of potash or what not.

But we have seen in the preceding pages that it is on account of a nervous system that animals, and especially man, towards whom our study now directs itself, being the highest type, and most interesting of animal structure, is placed forever over and bevond the highest order of plants. An examination of the constituent substance, Protoplasm, is found not to differ in any material respect the one from the other, and certain necessary conditions having been found which in the ultimate are the same, the one for the other, it becomes even more obvious, that it is undoubtedly by reason of a nervous system that the animal is raised above the entire vegetable kingdom, and with this view firmly fixed within our minds, let us approach to an examination of the conditions necessary to the death of the mule, or to the death of man, if you please, starvation being shown to be death as we always find it in plants (a type), and the highest cause therefore.

If you will turn with me to Green's Pathology, and to page 121, we will read, "John Hunter transplanted a cockspur into its comb and it has long been known that small pieces of the body, like the tip of the nose, or finger, might unite if fixed in position soon after complete separation from the body, but accurate knowledge has been attained only since Reverdin's discovery of skin grafting." *"The tissues, as is well known, do not die when the body, as a whole, does."*

Let me ask you, my reader, that if the tissues, and by that is meant PROTOPLASM, do not die when the body, as a whole, does, what does die?

Does not the nervous system die, and is this not what is observed?

Let us now turn our attention to disease and we shall find that each and every disease begins as a local one, or at least by local manifestation. Any change in external conditions acting upon a unicellular organism would undoubtedly affect every particle of its substance and modify all its functions, all its diseases would, therefore, be general. But multiplication of cells and specialization of function, enable normal conditions to act upon certain groups of cells, and to disturb their functions without disturbing primarily those of other groups. We thus get local dsease. It matters not what its origin, whether by means of a micro-organism floating in the blood, which cannot produce disease until it is arrested and locates, or whether from causes orginating from within the body, a vegetation cannot do harm until floating within the blood stream it is arrested and locates. *Thus, then, every disease is primarily localized in a tissue or organ, the blood beng counted as a tissue of the connective tissue type of which the intercellular substance is fluid.* What are the first steps or changes therefore relative to this localization of disease and how are they brought about? It is my personal and firm conviction that all disease starts by reason of a localized irritation, the causes, of course, being many, sometimes amounting to inflammation and sometimes not. But that always and in either case where the disease is an organic one, the impression is on the nervous system, and that it is by the accumulative effect produced thereon by the disease, that death is finally brought about. Irritants and injuries short of inflammation, but no less real, we will not stop to consider, but suffice to say, that many organic deases are brought about in this way, and may sometimes cause death by their very rapidity and persistence, and, therefore, structural changes may not be found; however, it is interesting to note that the *phenomena of inflammation is always the same,* that no matter what the conditions and no difference where the seat, the development of inflammation is always the same, and that it is only by specilization of cells that we obtain difference of results. Further, it has been shown that the primary effect of all inflammations and the effect proper is always upon the vessel wall, that this is affected is shown by the facts that all the early phenomena of inflammation are vascular, that injury of vessels alone, according to Cohnheim, causes these phenomena, that injury of tissues alone, according to Senftleben, does not cause them, further Ryneck has shown that stasis may be produced in the frog's web in which milk or defibrinated blood is circulating in place of normal blood, and also that in vessels the vitality of which has been destroyed by the injection of metallic poisons no such stasis can be produced. In all spontaneous inflammations the cause is carried to the heart by the blood, and acts first upon

the vessels, later upon the tissues. Later investigations have therefore confirmed Lister's conclusions, viz.: "That the essential lesion of inflammation is a change in the vessel wall, resulting from an injury which increases the frction naturally offered to the passage of the blood and is a step towards death." *"There is no structural alteration of the vessel, however."*

Where, then, let me ask, is the impression of so serious an operation as an inflammation received, if in no LOCAL structure? *I answer, upon the vaso-motor nerves.*

If the vaso-motor nerves were unconnected with all parts of the body, and if they did not anastomose with the great chain of sympathetic fibres, thereby connecting them to all the more important structures and vital organs of the ecomony, my theory would absolutely break down, but when we remember that disease to begin at all must necessarily do so by local manifestation, which amounting to inflammation or in a lesser degree to irritation, it matters not, for this elaborated product we know not what, through the vaso-motor nerves being felt by reason of their intimate connections to all parts and organs of the body, and as the disease progresses and accumulation taking place in the various nervous centres (the ganglia of the sympathetic undoubtedly acting as centres for minor disturbances), that by reason of this very accumulation, death is produced.

This theory, of course, presupposing some elaborated product peculiar to each disease which may be a poison, or molecular irritant, chemical, or what not. In those bodily structures not supplied with vessels and therefore devoid of vaso-motor nerves, the cornea, for example, no such accumulation taking place, for when Sentleben, with chloride of zinc, destroyed all the cells in the centre of a cornea without admitting any white blood corpuscles to the area, the part remained quite clear. Recently in one of our medical journals a case was reported where a piece of steel was taken from the cornea, which had remained there three or four years without producing any effect whatsoever, therefore, we are firmly convinced that it is not until the marginal area where vessels and nerves exist becomes implicated that disease, and especially disease of an organic or death dealing quantity or quality, *can begin.* In a large class of functional diseases, so called, no principle of an accumulative character being elaborted, or, by reason of its interrupted occurrence, the effect being lost, if, indeed, the dividing line may not be found herein situated, viz., of insufficient intensity to effect the vaso-motor nerves, and thereby the nervous system in general, or else no disease product being elaborated.

Although electricity, gravitation, etc., undoubtedly have an influence on all life, whether vegetable or animal, yet heat, as we have seen previously, just as surely stands in the first place as regards its importance, and that the accumulation of the disease principle as the product of all organic disease, which, starting as a local manifestation, and primarily affecting the vaso-motor nerves, and through them the whole body, by that primary accumulation or disturbance, renders imperfect or diseased in action the central nervous heat regulating centre and that all disease is primarily a disturbance of this centre seems probable.

I was not a little astonished not long since when, after a perusal of a work on cancer, by Daniel Lewis, of the New York Skin and Cancer Hospital, to read this in final, which was rather put in the form of a question to the reader: "Is cancer a febrile disease?" In it he says, "There are several features in the natural history of cancer which suggest the possibility of its being a febrile disease, the similarity of the process of simple inflammation in many instances, even when the disease is still local, indicate the possible truth of this hypothesis." Raymond and Brodeur report a case in a man aged seventy-six years, in which no primary cancer could be discovered, there were disseminated hard nodules, from the size of a pea to that of a bean, which the microscope showed to be genuine carcinoma, the symptoms during life were similar to those of pulmonary tuberculosis, there were periods of febrile attacks. After giving a list of cases with charts of temperature, Dr. Lewis closes with these words: "Other records indicate, as do those above given, a decided febrile movement when there is a general dissemination of the disease, there seems to be no evidence of such a condition while the disease remains a strictly local one, the question remains, says he, like so many others connected with the study of disease, a field for the investigator, which may yield results of decided merit."

I would have the reader in especial to note that, *so long as the disease remained a strictly local one, no fever movement was noted.* In short, it is within the experience of every physician that so long as cancer remains a local disease the victim remains in robust health and suffers but little, and not until the vaso-motor nerves become implicated does the disease do harm. Then it is that the primary disturbance of fever is noted, for then it is that the nervous system is becoming involved, but while the recorded cases of cancer before us offer admirable illustration of our argument, we must by no means be led into the inference that this primary disturbance of the blood flowing and consequently a heat regulating action, is always, nor, indeed, usually observed and noted by the unaided senses nor registered by the thermometer; indeed, it is doubtful in the extreme whether we are in any way yet known to science able to positively discern just when the vaso-motor nerves are taking part in a diseased action, for surely long before the most delicate thermometer is able to detect the slightest change in heat production or heat regulation, is the disturbance being minutely and accurately noted upon the nervous centre, we may perhaps liken this in results to the thermo-electric pile in comparison to the thermometer, and then perhaps the senistiveness of the nervous apparatus is only dreamed of, for without question we are here dealing with one of the most delicate structures of organic life. Nor again, must we be led to suppose that it is solely on the heat regulating centre of the nervous system that disease is registered, *although we do believe it to be the primary one,* for very probably each disease has its distinctive centre, and possibly by reason of the intimate connection of nerves to all parts of the body, and likewise by reason of the great sympathetic system, it is not at all unlikely that every disease of sufficient intensity to produce death acts on the whole nervous structure.

If, therefore, it is by reason of a nervous system that animal structure is superior to vegetable, and having shown that disease, no matter how produced, whether by micro-organisms from without, or vegetations, deposits, degeneration or what not from within, to begin at all, disease *must begin as a local manifestation,* that

this local manifestation ofttimes amounts to inflammation, which is always the result of injury and always the same, that whether amounting to inflammation or not, its local manifestation is only irritant, means injury, and that disease to be organic *must effect the vaso-motor nerves and thereby the whole organism, that arrested at its local manifestation it cannot produce death, that in many cases the local manifestation is less at death than it was when the person was in fairly good health,* that the product of the manufacture of disease attacks the nervous system and has an accumulative action thereon, that a person dying from shock dies not as the plant from shock, but that while the plant may die from shock, it is because it disarranges its protoplasmic mass, its circulation, or nourishment, or the like, while in man the impresson is on the nervous centres cheifly. So with starvation, the plant withers and dies immediately when its inorganic food elements are withheld, but man, whose liberated food elements are presided over by nerves, although all food is withheld, he lives for days and weeks and all because he possesses a nervous system, for if the tissues of a man do not die when his body, as a whole does, we must necessarily conclude that the life of protoplasm or plant life and animal life minus the nervous system, is a thing distinctive in itself, that the life principle of man becomes, by reason of his exalted position in the organic scale, essentially a life of the nerves and that all else is subservient thereto.

INSIDE OUR WALLS.

BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA, PA.

A WRITTEN call has come to me requesting that, in public print, I enlarge on the matter of my understanding of common home-made causes of the family diseases met by physicians in general practice. My talk in response must simply deal with current facts that the human family is slow to learn and apply to personal benefit. Yesterday I stepped into the store room of a newsdealer. Went there nearly every day all summer for my papers, and know the physical comfort and open house of the complaisant proprietor. But he had now started fire in his cellar heater, the register from which is in the floor near his counter, and was emitting a considerable volume of coal gas. To my surprise yesterday, this proprietor was coughing severely. While making change, I said to him: "Mister, I must hasten out from here; your cellar heater is emitting a lot of coal gas through this register by my feet; you are already coughing severely from this gas; and unless you can correct the fault that is poisoning your store air, you will cough all winter if you live that long." Hark at innocence! "Why, will a little gas give a man a COLD?" he said. "Ten times faster than if you was inhaling a draft of pure air," and I left him to study it out.

One day last March I entered a neighborhood restaurant for an oyster stew. The man in attendance at that hour had a persistent strangling cough which at times seemed on the verge of causing him to retch. When he placed my stew before me, I said to him: "Sir, you have a bad cough." "That I have," he replied, "it has nearly choked me all winter. Nothing the doctors give me helps it." "But you have never had a prescription from me," I responded. "If you want to cure that cough and save your lungs, you can do it in less than a month if you stay away from that gas flame where you cook the orders for stews."

"But that would make me lose my job!" he exclaimed in surprise. "That part of the problem is up to you," I said. "But if you will get a job that keeps you out in open air instead of over the poisonous fumes of that beguiling ringlet of gas flame that you turn on and off with so much gusto, your cough would soon vanish without medicine while you also save your lungs—and I charge you nothing for my prescription. If I had to be around that gas affair a couple of hours, I'd have grippe from it and be strangling with cough also." Five months after that, I met this man again, and he greeted me with: "Doctor, you gave me the right prescription that time! You said my cough would get well if I stayed away from the gas flame. I stayed away—got something else to do—and that cough left in no time!"

One morning I was rung up before daylight. It was mid-winter, but a thaw was on, the air cloudy and misty, when chimneys naturally give feeble dratt to fires. "Doctor, we want you right away—the baby is so bad with croup we fear she won't live unless she can soon get relief!" I hastened with the gentleman to his home—several squares away. With his latchkey he let me in at the front door, saying: "Go right up to the sitting-room—the front heater fire went out yesterday—and we have kept her in the sitting-room by the stove to-night for fear she'd take cold." The moment I passed through the vestibule into the hall, I said: "Why, Mr. W., the house is invaded by coal gas!" "Do you notice some coal gas?" he half questioned. I ran up the front stairs to the sitting-room The mother was distractedly pacing the floor with the babe hanging white and limp across her arms and striving almost hopelessly for breath.

"Your babe's croup is coal gas croup that is smothering her breathing! Throw open those windows!" I exclaimed, taking the child from the mother and hastening to the front room. Cold as it was there, I opened wide a front window to the babe, well wrapped in a double blanket, all except her face, which I turned toward the open window for direct help of outdoor air. With additional revitalizing treatment the symptoms of acute croup relaxed and the child survived; but by also pulling through a somewhat tedious bronchitis. Had this child remained an hour longer in the stove-heated, gassy room, the death certificate would have spelled—"CROUP"—and the wise health authorities would have trespassed with a house fumigation for the fancied suppression of a supposable contagious bacillus. What of the mother who had put the anxious night through with her child? Next day she went to her bed with developed grippe. Why that gas? The reach of pipe from the stove into the flue was pushed against the back wall of the flue, and in the spell of muggy weather there was no draft, and hence the fuel gas of slow combustion was increasedly backed into the shut-up room air. Many physicians recognize the fact that children's croups develop in the night—in the house air—or manifest the symptoms on waking in the morning—why? But please lay upon the shelf your old idea of "a cold" and of "a germ."

I was waked one night at midnight. It was winter. The gentleman asked me to come and see if I could relieve his wife who had "terrible cough and was so short of breath!" Her case was distressing, and she

the mother of twelve children—seven yet living. She was suffering intensely with croupous pneumonia, pale and anxious, and clammy with sweat. I was then asked to go to the story above—where I found this wife's mother striving with broncho-pneumonia. Three of the children had sore throats and continuous coughs. "Now I want you to take full charge, doctor," said Mr. K., "for we've had a physician coming, but he does no good."

"Mr. K.," I replied, "your house is dominated with coal gas; I can do very little for these sufferers unless they can be released from breathing poisoned air. How is your cellar heater draft?"

"Well, I don"t give much attention to such things, but I fear we need to have a new heater put in. The landlord says he can't afford that."

"Come right now down cellar with me," I said. "See here! That elbow is rusted out, and I'll pull it off—there!" A wash boiler more than half full of soot and scalings from flue ran off from the choked pipe and lower end of flue. For lack of draft the coal gas was regularly backed and found its way through the warm air channels to the bedrooms. Was any "germ" requisite to kill this family with pneumonic grippe? "Mr. K., this fire goes out at once!" I said. "I'll do what I can for your unhappy situation. But you go, first thing, in the morning before breakfast, to see your landlord. State the situation, and tell him for me that if he does not at once put your heating service into sanitary condition, I'll turn the case over to the Board of Health, and also make him responsible for all doctors' bills!" This fetched him; but it required a month of expert service on my part to get these desperately sick women out recovered. How they would have fared if I had been a routinist who applied to their cases rods of drugs only I need never know.

When attentively pursued it will be perceived that the ghost won't down unless the danger is well guarded. On another winter night I was rung out of bed. I recognized the man at the door. "For God's sake, come with me! I'm afraid my wife has gone crazy!" he implored. On the way I tried to soothe him by referring to mental manifestations in hysteria. He let me into the house with his key. He and wife had three rooms on second floor for housekeeping. A coal oil bracket lamp shed malodorous light on the stairway. He unlocked his wife's bedroom door at head of stairs. It was a small side-room with one window. The wife was mumbling, and continuously getting into and out again from bed. Fastened to the window frame at one side of the headboard was another smoky coal oil lamp bracket for the purpose of keeping a light burning in the room all night. For fear of "catching cold" the window was closely shut. Because of morbid fear of some prowling thief in night, the door to the front room, kept as a sitting-room, was bolted every night. With all sanitary ventilation thus habitually excluded month after month at night, this handsome woman's blood and brain and nervous system had been gradually poisoned down to the condition in which I found her. When told that the doctor had come, and I also had spoken, she bounded out of bed which only the moment before I had seen her climbing into, and kneeling upon the floor she began rubbing the carpet and stroking my shoes, saying, "Oh! is this my doctor?" I saw that she was extremely anemic, and asked a few leading questions. In the cooking and eating room she had employed the convenience of a coal oil stove—it was handy and made no dust! Others used a coal oil stove to do cooking—why not she? This had been her argument against wiser advice by myself. In her nervous depression a morbid fear had possessed her. She was afraid to be alone in her rooms. She wanted a light all night. If her husband, who lead an outdoor life, went out evenings to escape the stuffy prison of their rooms, she grew jealous and charged him with preferring other women. She complained of constant headaches, gaseous stomach and loose bowels, was mentally irritable, generally neurasthenic. At a glance I realized that I had in this demented woman another instance of blood and nerve poisoning through the auto-poisoning results of deficient oxygenation. Was I thinking of a microbe? Never an instant! Temporarily I suppressed her delusive excitement with doses of tripple bromides. Well wrapped in her ample bedcovers, I put her into a big rocker close by the open window of the front room, her sitting-room. Every air-poisoning kerosene lamp was extinguished that the carbonic oxide from the flame might be suppressed. Gradually she sank to slumber, and we put her to bed with the window at her bedside opened for oxygenating ventilation. Night lamps were vigorously prohibited. In four days she recovered reason and personal control. Later on she took a little house that would allow a proper range fire for cooking. But with feminine obstinacy she set up in her little parlor a showy gas heater to warm it—because other folks did so. And eventually this woman went insane, and was placed in an asylum, where she died. Delusions and manias are usually home-made afflictions.

Another case of extreme gravity—typical, for I am only citing a few representative situations. In the month of June was called to case of a little girl aged eight, eldest of three children, in uncanny slip-shod sort of family, living in an old-time house close by a busy railroad line in the city. The father was a locomotive engineer, much among soot and fire gases of railroad business. He was often sick; had suffered distractedly the previous year from anemia, neuralgia of head, and a bronchitis, for which I had attended him. His wife was of flabby nature and languid management, had a chronic sore foot and leg, occasional sick days of headache and anorexia that prevented her from attending to her household work. The child that I was called to had chronic eczema of scalp, for which I had prescribed the year before with much benefit, but which had now relapsed to filthy degree. The wife complained that the continuous smoke and dust from the railroad made their sickness—the house standing about twenty paces from the car tracks. But far worse was the house inside. On the kitchen side of the dividing wall was built an open grate fireplace, where the cooking was done by placing utensils upon the burning anthracite. The chimney, which arched over this fire much like that over a blacksmith's fire, did not draw up nearly all the fire gases, hence the house air was hazed day and night, winter and summer, with the carbonic oxide gases from the fire. Besides her scalp eczema, I found the child was confronted with a fearful diphtheria. The

throat swelled rapidly shut, her jaws stiffened at the joints, her neck bulged at the sides with tumefaction, some rash at first suggested scarlatina, she had severe fever. I worked the medicines into her through a space where she had lost several milk teeth. She could not talk, but struggled to swallow with gritty desperation. Scarcely anything could be done to her throat. Abscesses formed at the angles of her jaws and were early incised for exit of pus. But the process of local disintegration came to no pause till after the tonsils and the flesh beneath her left jaw sloughed. The parotid and the submaxilary salivary glands were left bare to sight. Milk put into her mouth would flow out through a hole in the left side of her throat in consequence of destruction of left tonsil.

Meanwhile the baby developed a quite similar attack. Having been kept constantly in the house, the babe was extremely anemic and white. For considerable time the child had been passive and dull, which the mother accounted for with the idea that her baby was "so good it made no trouble." The babe made no response to remedies and soon died. A boy, two years younger than the girl, had been running about outdoors from morning till bedtime through it all, and kept well and hearty. The girl, however, had always been afraid of black men, and stayed indoors —hence the poisoned state of her nonaerated blood. For about ten days the girl was nourished with milk and rich broths through the space where the teeth were out. Then gradually the stiffness of her jaw yielded, and she began to swallow foods with the eagerness of one starving. I allowed her everything nutritious that she seemed willing to take. New flesh sprang up and covered the exposed salivary glands and the ghastly cavity in her side-face and neck. Fluids ceased to flow through the channel made by slough. By degrees she began to articulate words expressive of her wants. Next her ears began to discharge suppurative matter profusely. By the time they were decently healed she could walk again —but she was stone deaf, and soon became a mute. My entire attendance covered nearly two months. By my advice the family changed location and I lost knowledge of them. It was not known that these children had been exposed to either scarlatina or to diphtheria. I heard of no other cases following theirs in that neighborhood. These cases were auto-generated by the blood-rot resulting from inhaling their poisoned house air. Fuel gas continued in the breathing-air is a positive destroyer of corpuscular vitality—hence corresponding results in families. Between this extreme case and the mildest, we meet all the intermediate degrees of developments.

From the home we follow children to the school. Four squares away is a public school in which one of my lady patrons is a teacher. The building is warmed by hot-air furnaces. Whenever these get out of order or are neglected, the class rooms are invaded with coal gas. This teacher has repeatedly come to me saying, "Doctor, do give me something to keep me up—my energies seem completely exhausted!" Opening windows is not often successful. Pupils near the open window complain of cold drafts. Pupils near registers are exhausted by the hot-air drafts from furnaces. Anemia, headache, coughs, diphtheria, tonsilitis, skin eruptions are the common antagonists of pupils. Children's brains become dull, attention impracticable, discipline perverse and difficult, study ineffectual. Scholars drop out from classes with illness, fear of contagion flouts its black flag to interrupt attendance, certain schools are backward, teachers are charged with lack of capacity, when the radical spoiler of the school is the toxic gas in its breathing-air. Sunday-school scholars and teachers are more or less subjected to the disabling ordeal of badly heated and badly ventilated rooms. An overcrowded "infant school" of little ones packed into a confined area of bad air for religious instruction is not only productive of many children's diseases by auto-poisoning, and from mingled breaths, but is a civil way-station for premature transportation to the heavenly land "where angels stand."

Close to the home comes the church with its noble mission to the world. Church heating is often indifferently done for reason that sextons are seldom men of scientific comprehension. Heat for an hour or two is the cardinal thought and purpose. The fire builder performs his routine at schedule intervals because hired for that purpose—with no condition of contract to protect people's lungs. He may not be even aware of the extremely unsanitary nature of fire gases—he may care nothing about the hazards of bad furnaces or soot-choked drafts—and even trustees may shirk consideration of complaint with the nonchalant exempt that the heaters are good enough so far as they can see. But if they knew enough to compel the firemen to pull off the soot-choked elbows they would see something of vital interest. There are persons who never go to sleep at off hours except when in church. The best constructed argument from the pulpit fails to brush away the stealing sense of drowse. A crown of glory seems to settle into the circlet of a dream. The thief is in the church with a benumbing anesthetic. The church with sleepy congregation, or with much coughing among the attendants, usually has coal gas or leaking gas fixtures. The erroneous utility of locating hot-air registers along the aisles in the floors, beneath the faces of sitters, has hastened many an invalidism and even death among the worshippers. Many a grippe has followed such a sitting for a two hours' service—this I learned by my own experience. The lack of pure breathing-air in churches does more than injure health. Normal tone and activity of brain and spirit are supremely essential in religious life. Religious interest never rises to its highest service in the stupefactions of poisonous gases and dead air. Whatever the quality of the minister's effort, mind and heart of listeners must be kept in a state of wakeful receptivity, or the word falls upon unresponsive soil to little effect. It is evident that upon the healthfulness of the church air depends greatly the physical and religious tone of the congregation. Physical comfort and mental elasticity gauge the spiritual energies and grade the higher planes of abiding appreciation.

Allow me to instance one church in point where the writer was a frequent attendant. Passive melancholia and fraternal aberrations clouded the spiritual air. Dissembling criticisms, factional jealousies or disaffections decimated the ranks of leaders and followers. Choirs could not hold together because of peculiar touchiness. Singing was laborious, voices and chests chafed, endurance yielded. Preaching was

hard work, pastor often hoarse, voice weakened, he frequently broke down and required vacation. If the membership made a gain in numbers a subsequent relapse left the pews more sparsely filled. That church was prettily located, but it had one fretting source of default—architectural misshape that prevented healthful ventilation, heaters under the floor that stood in comparative dug-outs in the ground without adequate supply of fresh air to furnish the necessary warm air to heat the house, and an overplus of fuel gas. A poison in the church spoils the service and singes the soul. If oxygen is needed to make fire burn or to brighten the blood, oxygen in the church air inhaled is also needed to make the purpose glow and grow in religious interests and physical protection. The side windows of this little church were narrow and short, swung on hinges opened on level with people's heads and therefore were denied an opening except in warm weather. The warm air drums of the heaters in the dug-outs beneath the floor rusted out, but made to continue to serve till next year's patching time came round. The red coals in the firepot of one heater could be seen through the rust-out holes in the hot air drum by looking down through the open register in the floor. The gas fixtures were continually leaking gas in the auditorium, but that was not officially considered and rectified. No hygienists were members of the church boards. A conscientious hygienist would have seemed troublesome and made religion too costly. The audience room was arched and the heat rapidly wasted. The extra consumption of coal produced extra quantity of coal gas. After people settled in their pews they would begin to cough. In about a half hour many would grow dull and drowsy. Though the minister labored vehemently to interest and impress, here and there a head would begin to droop in slumber—so deeply, exceptionally, that the sleeper snored before rousing. I have observed five persons nodding at once during a service. Next day persons frequently were ailing, and supposed they had "taken cold in church," inasmuch as they felt chilly, had headache, brushes of rheumatism, bronchitis, nervous prostration as the case happened to turn out. Lung diseases were unusually developed in this congregation, and deaths were dismally numerous. The industrious pastor and his affable wife, she who gave the encouragement of her presence whenever able to sit up in her pew, both broke down completely and surrendered the charge. Coal gas, leaking gas fixtures, unsanitary plans of heat and architecture as church propositions are predestined obstacles to church health and religious progress. Now this church instance relatively illustrates the situation in hundreds of churches, lecture rooms, public halls, all auditoriums not heated with wisely distributed hot water service. When a new pastor was called, a new church was built, hot water heating and electric lighting installed—and all went well.

Can we get a glance at the inside process of these home-made antagonisms to health and comfort? Without needless technical precision, we premise that the usual combustion of carbon in the form of coal, coke, oil, charcoal, wood, sets free the carbonic oxide gas in two forms, namely, carbon dioxide—principally the product of perfect combustion; also carbon mon-oxide—principally the product of imperfect combustion. Even if not escaping from fires and registers indoors, these gases, being heavier than air at ordinary temperatures, and though discharged at height of chimney tops, settle back toward the earth and are diffused through the breathing-air of the lower plane of the atmosphere. Thus diluted, say in towns and cities and near public works, some proportion of fuel gases drift with breathing-air into the apartments of population through doors and windows. Frequently streams of noxious fuel gases, from chimneys opening out near by, are wafted day and night in at open windows of rooms of workers, or sleepers, or perhaps of the languishing sick, simply with the current of the cooling breeze. In all cases, however, where carbonic gas is thrown out in our homes or schools or churches by combustion of fuel of any kind and illuminants, its admixture poisons the breathing-air indoors in exact proportion to the extent and density of that gas. When drawn into the lungs, carbon gas relatively imprisons the air vesicles, to the exclusion from them of oxygenating air, and, in flush quantity, causes speedy suffocation or asphyxia, frequently resulting in death. Even in small, diluted, gradual quantities, the presence of fuel gas in the air respired interferes with the normal aeration and oxygenation of the blood, impairs respiratory tissues often with which it comes in contact, produces anemia and debility with their endless chain or neurasthenias, or induces dyspnœal complications and weak heart function.

Yet further, carbon mon-oxide gas passes through the air cells in the lungs when breathed with the air, unites with the oxygen in the red corpuscles of the blood, depresses or destroys their vitality in some proportion, thereby embarrassing the normal functions of nutrition, allowing septicity of the system to accumulate, and laying the foundation for many if not most of the common forms of resulting disease. Always and everywhere a poison breathed, whether consciously or unconsciously, is as much a poison in itself to the human system as is a poison swallowed. The subtle, penerative nature of monoxide gas is comprehended when we remember that it passes through very hot cast iron. Hence in every house, cabin and shop, where cast iron ranges, cylinders and stoves are burned to excessive heat, the invisible and practically odorless emissary of disease from this source is radiated into the breathing-air of the place, measurably reaches every room and corner, because the tendency and law of house air, like air everywhere, is to equilibrium. Will you test it? See with what rapidity the odor of a scorched feather or boiling cabbage over the kitchen fire will diffuse itself to every room. All gases from burning fuel are as diffusible as is the odor of burning wool—so readily detected by the smell. But the exceeding danger of the carbonic gases from combustion of coal, coke and charcoal lurks in the usually forgotten fact that the bulk of these gases is quite devoid of any alarming odor, and accomplishes its mischiefs unsuspected.

Though carbon mon-oxide gas—CO—will burn in an excess of oxygenized air, it is not thereby consumed but merely changed to CO_2 or carbonic acid gas, which is scarcely less harmful to the human system when inhaled; and it is thoughtlessly inhaled by the masses to a very injurious extent in their homes and other places where fuel is burned with-

out open air ventilation. Most persons make the enormous mistake of thinking that after the sulphur gas from fresh supply of coal on the fire, and which they DO SMELL, has burned off, that no other danger remains. They imagine, without reflection or through ignorance of physical science, that the "blue flame" or fresh coal smell is all the gas-danger there is. Folks customarily in daytime shut up the fire a few minutes till the sulphur gas burns off, and then freely remove precautions and turn dampers which switch much of the odorless carbonic oxide into their breathing-air the remainder of the day—probably of the night also—so long as the fuel lasts and the fires continue to burn. Too many persons do not know or do not remember that fire-heat is gas-heat, and as expansive as is the hot air with which it is distributed through the house. Every adult and every child should understand that if they sit or stand so close by the fire or the register as to feel the direct expansion or drift of heat in their nostrils, they are risking the danger of inhaling carbonic or fuel gas with that heat in greater degree than if keeping more distant. Persons who hug closely about a fire for considerable time, probably because of the need of additional clothing, or on account of removal of warm clothing, are liable in a few hours after to discover that they have "snuffles," dry nostrils, irritated throats, noticeable hoarseness and cough. They imagine they have "taken cold," but they have been breathing fuel gas with the fire air. They will feel chilly because of the degree of devitalization that has occurred. In a family where two children had played about the heater register to keep warm, had contracted croup and died, although they thought they had a smart family physician—the third and youngest child later on also developed a severe attack of croup. The father, half frantic, rung me up at midnight to hasten to his house in the emergency till he could go a mile further for their regular doctor. It was winter. When I arrived, the mother, to "keep the child warm," had the register out and was holding the gasping little one with face near the open hole from the flue—stupidly causing the hastening death of their last child. I moved her away from that furnace drift instanter, and to her dismay opened widely a window. I asked her if their doctor had never told her of the deathly dangers of holding a sick child's face so near the furnace drift of a coal fire? She replied that he never had. "Then," I said, "he don't know enough to save children's lives in croup!" This child recovered. I could understand why the two other children had failed to survive their home-made affliction.

The carbonic oxide gas produced inside the walls of nearly every building, and so thoughtlessly neglected, is a corrosive irritant, and especially conducive to all the general diseases of the breathing channels and the lungs. There is no other prevalent agent inhaled that causes so much anemia in the human family. But I must defer a review of anemia to a future study. We seek now the proofs of facts in daily practice. The severest case of pneumonia that perhaps I ever saw was that of a man of modest leisure. His physician had left town for a few days, and one night I was called in conjunction with my son. I found the man nearly unconscious, moaning with every distressing breath, ashen and sweated, and coughing little except blood. He lay in a small room. No window was open. Within three feet of his bed, upon a small table, was a portable coal oil stove going. His home keeper said that he used this handy thing to sit by usually in his tidy sitting-room during the day, and at night took it along to make his bedroom warm. His vitality was blighted, his lungs smitten, nothing could avail, he expired two days after our call. A man seventy, and disposed to sit around in shirt sleeves and smoke his pipe, felt chilly, huddled several days around his little anthracite heating stove, developed severe grippe, which put him into bed for ten days. When rallying from the grippe, it was discovered he had an ulcerating sore in his mouth, on left side of upper jaw. This refused to be healed. It deepened and extended, was cancerous in nature, a portion of the jaw was removed by operation, the disintegration attacked the face, he died. Repeatedly, for two years, I had urged that man to avoid his gassy old stove in winter—since he was so subject to attacks of influenza. A lady physician in a country town had been several weeks bedfast, starting with grippe, continuing with nervous prostration involving weak heart, intervals of unconsciousness, with low temperature even in blankets. She practiced in a coal town, where all burned lots of anthracite, some used cast-iron cylinders red hot, some supplemented with open grates day and night. I went to unravel the reason why the lady remained an invalid. I found that in the lower end of the hot air drum there had been burned a hole as large as the palm of my hand, close above the fire. Through this hole carbon gases from the fire were steadily suckd into the heated air channel, and thence carried into the breathing-air of the bedrooms. The cook range, when not needed in full draft and at night, was dampered off in a manner that backed coal gas immediately into the house. Furthermore, on the third floor an old lady had been confined to her room many weeks with anemia and general debility. Her room was warmed by a fancy heating stove with a self-feeder chute which conveyed by direct outlet a varying proportion of coal gas into her limited room area. By correcting these fuel mischiefs in this fine house, recoveries were not slow. In a small house adjoining this physician had a patron family. A cookstove was in the kitchen, the sleeping-room overhead, stairway door kept open at night to let heat go up. Whenever fresh coal was put on their fire, sulphur gas was always smelled—direct proof that their fire gassed out into their rooms, especially when backed at night with cut-off damper. The two children were repeatedly subject to what the mother termed "chest colds." The mother was thin to skeleton proportions, anemic and victim of neuralgias. The father had then lately suffered an acute night attack of pleuritic and pneumonic congestion which nearly proved fatal. The younger boy developed croup one night and expired in two days. I detected the coal gas in this house as soon as I entered—but nobody had discovered to this little family in timely importance the house-causes by which they had made their own plague.

A year or two prior to my closer study of the subtle effects of combustion gases on the hygiene of house air, I had a fearful experience that set me to the task of profound thought. A young husband and wife and three children—the latter aged five and

seven years and a month old babe at the breast—had set up housekeeping in a peculiar little perch of a house, about ten by twelve on the ground, and consisting of three rooms, one above the other. The first floor was the cooking and eating and living room. Space for stairways had to be taken from the area of each room. The heat from the cookstove on the first floor was depended on to warm the rooms above by way of the open stairs. In rear of the ground floor was a miniature yard just large enough to accommodate the hydrant and the privy for the house. The family had lived in this cabin-decked house several months. I believe they had put the winter through there. In March the lad of five years became desperately ill with diphtheria. When I arrived to the case, the stove lids were off the cookstove to slow the fire which made the small first floor room unbearably warm. The air seemed pungent, and I concluded it was charged with coal gas. I opened the back door, but the odor from the repulsive privy but a few feet distant caused me to promptly close it. The sick lad had been vomiting, was in bed in top-story room, and was raving with fever. His throat and tonsils were offensive, had to be mopped repeatedly with antiseptics, and his nostrils were severely involved. In four days the throat showed encouraging symptoms of improvement, but passive hemorrhage from the nose set in, no remedies would hold the case, and the boy died on the seventh day. The degeneration of his blood seemed so complete he literally seemed to rot in the throat and nostrils—the parts where the poisoned breathing-air had swept its incipient contact of destruction. His elder sister, complaining of sore throat soon after her brother went down to bed, I had her removed many squares distant to the house of her grandmother for care, where she also died soon after under the charge of another physician. The plague was not carried to these children. Beyond all question it was developed in them by the poisoned air at home. I no longer believe that the malignancy of scarlatina and diphtheria depends on a natural extraordinary quality of virulence, but rather on the degree of co-existing impurity, or putrefactive trend of blood and cells of the system that constitute the soil on which these contagions rankle in development. A detail of cases that I have studied during the last thirty years would cover a volume of hundreds of pages—hence my convictions that no bacteriologists who profess that diseases are imparted from bacillus to persons and from person to person by bacillus as the radical cause and spread of common diseases will ever disperse.

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Tuberculous Cervical Adenitis.—A. Gregor (*Brit. Med. Jour.,* Sept. 29, '06) relates the case of a child of six, with a swelling of one week's duration on the left side of the neck. In the father's family there was a tuberculous history. The gland was tender and painful, and it suppurated in a few days. The resulting abscess was opened and drained. The discharge continued ten days and the whole gland began to break down. The parents refusing a thorough curetting of the cavity under anæsthesia, the child was subjected to irradiation, fifteen sittings, each of fifteen minutes' duration, being held. The granulating surface closed up and healing resulted without violent reaction.

SCHOOL AND THE CHILD.

BY A. L. BENEDICT, A.M., M.D., BUFFALO.

TO much has been said as to the evil influence of school life on the child that it seems worth while to consider the other aspect of the question. But, before doing so, it is well to admit that, like every other factor in life, school has its drawbacks and dangers for the individual. A child with incipient tuberculosis, large adenoid masses in the throat, chorea, extreme myopia and even moderate degrees of hypermetropia and astigmatism, deafness, or any serious physical weakness, ought not to be sent to a public school, but should receive only special instruction, unless the defect can be remedied. No reference is now made to diseases which render the individual pupil (not *scholar,* in spite of the use of this word in the present sense by many writers who really know better) a source of danger to others.

Education in schools is so largely a matter of sight and hearing that defects of these special senses cause backwardness, culminating in the idiocy of deprivation. For instance, a girl supposed for years to be almost foolish, was observed by a visiting relative to be reading in a peculiar attitude, with the book held very near the eyes and at an angle. The relative was not a scientist, much less an oculist, but she had common sense to recognize that some grave visual error was present. At her suggestion, this was fairly well corrected and the girl soon gave evidence of more than ordinary intellectual brightness.

According to the laws of all parts of the United States excepting some comparatively unsettled areas every normal child is required to go to school till he or she is fourteen years old and, at this time, the grammar school should have been completed. Perhaps half of the rising generation manages, in some way, by idleness, inefficiency, or by partially disabling sickness or a degree of stupidity not sufficient to warrant inclusion with the defective class, to reach the age limit of compulsory education before completing the grammar school course. However, they get enough education for practical purposes. About 10 per cent. of the population of school age—that is, of the whole stream of population as it passes a given point of age—has a full high-school education and 1.3 per cent. has a college education.

Nothing like this amount of schooling has been attained by any community until recently. Neither has the death rate ever been so low and the longevity rate so high as at present. While these rates depend largely upon conditions affecting the population under and over school age, yet it is certain that there is no conspicuous undermining of the health of school children, as compared with conditions in the past, and, indeed, time has elapsed without marked change in the school requirements, so that any deleterious influence would now be manifest in the population up to the age of 35 or 40, and by heredity in the infant population.

So far as can be determined by ordinary observation, most children enjoy going to school. By this is not meant that it is easy for them to get up in the morning, or that they do not dislike certain subjects and parts of subjects, and that they are reluctant to leave school in the afternoon, or particularly on the Friday afternoon before a vacation. Last fall the

writer saw and heard many of the children of a grammar school, on their way to the first session after the summer vacation. Their appearance and their conversation, which was entirely spontaneous and not intended for an adult's ear, showed an unmistakable and explicit pleasure in the school work. In expressing the belief that the average child enjoys his school, we do not mean that he enjoys it as he does eating candy, or going fishing, or attending a matinee; but in the sense that normal, active adults enjoy their labor: with due regard for the inertia in getting work started in the morning, for the relief of finishing a task, for distasteful details. With these qualifications, the normal child, like the normal adult, does, in the main, like his work, and realizes that he is happier than in a state of idleness. Now while an occasional enthusiast may find delight in an amount and kind of work that is excessive and unhygienic, it is a pretty safe conclusion that a wholesome enjoyment of school by the majority of boys and girls, indicates that the work is not harming them.

One of the most senseless criticisms of school work comes from adults, suddenly confronted with some question in arithmetic, geography, etc., which they cannot themselves answer and which does not occur to them as of interest. Then follows complaint to the teacher, educational department or that ultimate tribunal, the newspaper. Variously expressed, the argument of all such complaints is the same. How can a little child be expected to know what persons three or four times as old do not, and why should his little mind be burdened with knowledge that the particular adult does not find practically necessary? If the question were simply sprung on the child as the child springs it on the adult sympathizer, the injustice would be indisputable. As a matter of fact, with one exception, such questions, in arithmetic, geography, grammar or any other subject are presented to the child only after a careful preparation, so that the question is either a perfectly reasonable test of memory or else an exercise in logic which leads the child just one short step from ground with which he ought to be familiar. The exception is that, in many schools at one time or another, problems are propounded not for the sake of the information itself nor in regular course, but simply to train children in the necessary art of getting definite information from works of reference, with such hints as they can obtain by word of mouth. So, too, in general, with the exception of spelling, the rudiments of arithmetic, etc., it is not intended that the details of an educational system shall be memorized by students, nor that every subject shall be of subsequent practical utility. The main object is to develop the intellect and to impress enough upon the memory so that the child, or later, the adult, may know how and where to find information on definite topics. For instance, the tables of denominate numbers are not many of them used by many persons and all of them ought to give place to the simple metric tables, yet as a drill in mathematics and as a basis for certain lines of study and practical business matters, they should certainly be included in present courses.

A nervous specialist in a clinic on chorea, has spoken eloquently of the anxiety of the child to get to school on time, to stand high in class and to pass examinations, as a factor in etiology. So, too, at least by the laity, meningitis is considered especially likely to affect studious children. Chorea, in the clinical sense, may mean a local nervous disturbance or lesion, a metabolic affection or, perhaps, a specific infection. Meningitis is usually infectious, even pretty specifically so. The laity are thoroughly imbued with the idea that it is the bright, studious children who have meningitis and it is very easy for bereaved parents to ascribe an attack to overwork at school. In such a case, adult friends, schoolmates and even teachers, having in mind the motto "De mortuis, nil nisi bonum," can scarcely fail to acquiesce. But it is questionable whether intellectual brightness has anything whatever to do with the lodgment of an infection and equally questionable whether chorea develops proportionately more often in children in school than in those not in school or in hard working pupils rather than in those who are too lazy even to worry. Statistics are difficult to get because the age which predisposes to chorea is included in the school age.

In any particular case, the circumstances must be carefully considered before denouncing the school. There may be cited a girl of eighteen, in a public high school, high strung, delicate, frail, apparently on the verge of a break-down. Any chance infection or functional nervous disturbance would select such a girl by preference, and then how easy it would be to say that school was responsible. So, too, from another viewpoint, the break-down might be attributed to an insufficient diet, especially at breakfast. Another critic might remember having seen the girl dancing or assisting her mother in entertaining friends until midnight and, while exculpating the school, reproduce the fifth-reader diatribe about social dangers in their relation to physical health. As a matter of fact, the girl is really doing better at the public high school, where she is treated as a responsible creature than she did at a private seminary where all the pupils are graduated with an assortment of honors. And the girl herself, though occasionally sighing for the ease of the seminary, and for its social prestige, realizes that she is benefited by the more rigorous discipline of the public school. While obliged to choose her work with care, she is still able to keep up with her class and is gradually gaining strength.

As to the other two points, it is true that her diet is not all that it should be, but it would be unfair to make the incrimination a personal one. As to social stress, those who notice her presence at dances and receptions should also notice that it was only on Friday and Saturday nights and that, with moderate indulgence in such mental relaxations, she is very carefully guarded against excess and is being trained in the ways of good society by a most judicious acquaintance with her elders as well as with immature boys and girls.

In this case, we have a girl handicapped with a heritage of simple lack of strength on one side, of distinct neurotic taint on the other, with organic evidence of physical weakness and indications of a delicately balanced, yet not overbalanced, nervous system. Possibly it would have been better to have kept her out of school and to have let her develop physically. And yet, by careful attention, she has almost completed the usual formal educational course, has

been trained to take her place easily and gracefully in society and has actually gained in health and strength. Certainly, she has come out as well as many girls who have been free from the supposed baneful influence of school.

It is sometimes said with regret that our public educational system imposes an irksome discipline, involves anxiety, and places all children on the same intellectual plane, without reference to their individual abilities or limitations. Without defending the system as altogether perfect, either in conception or in practice, it ought to be recognized that the supposed general defects of our public schools are the best part of the education.

It is very pathetic to think of a poor little school girl developing spasms on account of early rising in the morning and the fact that she is anxiously watching the clock with one eye and her table utensils with the other. But, aside from any purely professional scepticism as to the adequacy of such causes, a dispassionate mind fails to see any hardship in expecting the child to go to bed so as to have all necessary sleep before seven or half past, allowing plenty of time for dressing, breakfast and the trip to school, under ordinary conditions in the city. It is only exceptionally that an individual is found, so fortunate that he does not have to work and to work at an appointed time. Even the most approved type of social idler has a good many engagements that he simply must meet on time or be disgraced. Thus our sympathy for the school child watching the clock in the morning to avoid being tardy, is reduced to the extremely impersonal and attenuated regret with which we confess to being a miserable sinner. It is simply the fate of the race.

With all allowance for foolish fads in education, for over-zealous teachers and for examiners whose idea seems to be to puzzle rather than to test the pupil's knowledge, our public school system, with comparatively few exceptions, sets the pace at which the average pupil can march without undue fatigue or anxiety. The tendency is to encourage the pupil who is beyond the average to go into a company ahead, or to act as a non-commissioned officer to help his fellows, or to take up some special detail. We find the baneful evils of too intense competition in school, just as in business, professional and social life. Perhaps it would be wise to do away with every prize that acts as an incentive to work simply to excel another and yet, if we did this, there would still be the strain, the false pride, the heart burning, the sense of shame and defeat in athletics, debates and social contests. School is of value only as it trains us to live and the child might just as well learn here as later, not to strain himself injuriously in competetive effort and to accept success or failure philosophically. Indeed, he might better have this lesson placed before him to learn under the guidance and control of parents and teachers than to be kept in ignorance of competition till he is free from authority.

Those pupils who fall below the average are more numerous and afford a more serious problem. Some are simply lazy, and have to make a spurt at examination times. For such we may feel little sympathy and little anxiety. Others are handicapped by extrinsic circumstances. In some schools, whole grades have to be taught English as well as the routine studies. This defect is usually easily remedied. More serious is the fact that an increasing proportion of pupils have at home none of the moral, sanitary or intellectual helps that, on general principles, we have a right to expect of parents. So bare are the homes and so barren the home influence that the pupil has practically no fund of general knowledge except that of the street and even the references to ordinary affairs found in school readers and arithmetics, are not understood by the child. To such, the school, instead of being a rather dreary institution for work, as we imagine it to be, is all that the child knows of cleanliness, kindness, luxury, and even comfort and warmth. Certainly, such children are not liable to physical ruin from the school, on the contrary every hope they have in the world is centered in the school.

It is chiefly with the remaining pupils who cannot keep pace with the class, that this paper deals. As has been said, individual faults may be found with the system, or the teacher. These need not be discussed here, excepting to remind ourselves that the physician or parent who has never been inside a public school from the time he graduated till his own patient or child has proved inadequate to the tasks imposed, is not likely to be an impartial or well trained critic.

Allowing for exceptional conditions, it must be distinctly understood that the child who breaks down in school, who cannot keep up with the class or who cannot stand the discipline without neurotic manifestations is a defective. The defect may be purely temporary, whether due to an essentially physical or mental weakness. It is absurd to keep a choreic girl in school or to let her sew at home or to make her do any other task requiring concentration of effort. And it is equally absurd to blame the school system as to blame mothers, for trying to teach their daughters to sew and do other simple domestic work. Dysmenorrhœa may demand for a girl some leniency in school discipline, or a more or less protracted vacation. But it is just as absurd to demand—as has been seriously done—that our school system should be remodeled in some undesignated way, so as to allow every girl beyond the age of puberty a vacation every lunar month, as to demand that business, domestic and social life shall be similarly organized.

The average child finds that he is not an average in everything, but that he excels in some study, fails woefully in some other, and maintains something like an average in others. This fact alone is part of his education, teaching him to respect individual gifts, to appreciate the natural reason for specialization of effort and yet to make an intellgent effort to do reasonably well even in those matters that come hard.

With all allowance for pupils below the average for transient and obvious physical reasons or because of natural asymmetry of intellect, we come finally to the larger group who are permanently behind and who tend to leave school for work, or to "stay home," or who gravitate to seminaries and private tutors, if the family has sufficient means.

Every such boy or girl ought to be examined to find out why he or she is behind the average class. The explanations "lazy," "stupid," "delicate," "nervous," etc., are often ignorantly used and often badly mixed. First of all every school department ought to have an adequate staff of physicians to examine eyes,

ears, heart, lungs, urine, throat, etc., of all children, not simply as part of a routine to protect against infection or as a matter of medical charity, but with special reference to class standing. As already intimated, some very definite, removable obstacle may be found, or the child's deficiency may be plainly referred to as incurable physical condition, relieving him of the stigma of laziness, stupidity, etc. As in the case of moderate deafness, this condition may not be sufficient to exclude him from school or to warrant his commitment to some special school or institution. On the other hand, the physical lesion may be so marked that it is plainly inhumane and contrary to sound economic principles, to continue the child's education.

By a process of exclusion, the group of backward children is reduced to one in which there is no notable condition of general physical disease, nor of special sense lesion, nor of any defect sufficiently gross in its manifestations to warrant committing the child to any kind of an institution to which the term asylum can be attached. Speaking plainly, the children that remain are stupid, for the intelligent teacher will long ago have eliminated the lazy ones, although she may have considered as lazy those in whom the examining physician found some definite impeding cause.

Occasionally, stupidity may be simply an extreme degree of slowness of mental action, compensated for by marked surity and strength of movement, as in some cases of bradycardia. It is scarcely worth while to attempt a formal definition of stupidity except to point out that it is not imbecility nor insanity, in any practical sense. If we try to adhere to the American doctrine that "all men are created free and equal," the problem of the stupid boy or girl becomes extremely difficult. If we forget the preamble of the constitution and recollect the experience not only of ourselves but of the world for several thousand years, the solution of the problem becomes extremely easy.

The public school is no place for the really stupid boy or girl. Neither is the active, intelligent, working world, preparation for which is the aim of the public school. There is an abundance of wholesome, though humble work for the one who is stupid and poor. This work must be done and why try to reverse the natural order by embarrassing the schools with the more or less vain endeavor to get the stupid boy through a course which will lead to his studying medicine, law, theology, or engaging in politics? For the stupid and rich, there are pleasant and, in a sense, useful social positions, preparation for which is admirably made in various seminaries and special private schools. It would be unjust to intimate that all private schools cater to this class, and yet many persons, perhaps the majority, so far as boys are concerned, in whose case money is no object, hold the opinion that the best training for the normal American youth is in the public school.

One-child sterility is found by F. S. Matthews (*Surg. Gynec. and Obstet.*, May, '06) to be as frequent as absolute sterility. The causes are gonorrhœa, sepsis, retroversion or flexion, tumor, etc.—almost always some pathological condition of the female genital tract. This sterility is acquired, generally from gonorrhœa, and is not congenital.

NOTES ON THE MANAGEMENT OF LABOR.

BY W. T. MARRS, M.D., PEORIA HEIGHTS., ILL.

IT makes pleasant reading to sit in a comfortable chair by the glowing embers and peruse the obstetrical experiences of fellow accoucheurs. Many of these gentlemen who disclose to us their obstetric lore write as if managing a case of labor from start to finish were as easy as rolling off the proverbial log. It is presumed, of course, that to obtain such happy results we are to absorb their particular methods and routine. A few writers—they are in the minority—tell us their troubles and dilemmas without any glitter of tinsel and how they extricated themselves from them. From these we are as likely to profit as much as from experiences that come from more scientific and erudite pens.

In no other branch of medicine does a man so much earn his money as in the practice of obstetrics. One cannot live and practice the art long enough to unerringly know when premonitory pains in any given case will eventuate in the first stage of labor. Even during any part of the first stage the termination of labor is simply a matter of speculation. After labor is on, evidenced by a dilating os, the law requires the obstetrician to remain with the case until the third stage is passed. Fortunately the average length of time required is only seven or eight hours, but quite often it is two or three days, as many who read this will readily acquiesce.

The methods and measures of facilitating normal labor I made the text for an article in the September TIMES. These were chloroform, emetics, quinine, sitz baths, rectal injections, mechanical aids, such as change of posture, abdominal bands, etc. Since writing the article I note that some other writer in a journal emphasizes the value of the hot hip bath, claiming that it has given him far better results than any other routine procedure. The bath in order to be of any great utility must be carried out effectively and persistently. If done in a haphazard manner little can be expected. The woman should be placed in the largest tub that can be procured, if no portable bath be at hand; she should sit flat down in the tub and not be permitted to sit in a "twist," so that the uterine and abdominal muscles are thus put as it were in a splint. The woman is prone to put her muscles at rest so that she can enjoy the freedom from pain. The bath should be continued from one-half hour to one hour. As the water cools it should be replenished by more hot. Sufficient blankets should be placed around the patient to keep her warm.

One thing I did not mention previously was the rupture of the membranes. Hydrostatic dilatation has many points in its favor over plain cephalic dilatation, the former being the method of Dame Nature, who is a better physician than any of us. However, there are many conditions where a timely rupture of the membranes will speedily terminate the labor with safety to the patients and satisfaction to accoucheur. Excessive liquor amnii often makes the procedure imperative. If the os is three-fourths dilated and the woman's pains seem unavailing a careful examination during pains should be made. If there is no advancement of the head or membranes during repeated pains here is a case for rupturing the membranes. It is, of course, presumed that there is sufficient engagement and no indications for altering the position. The latter procedure can usually be better accomplished while the membranes are intact. Various instruments are used for rupturing the

membranes, from an overgrown finger nail to a hairpin. This should be done carefully and antiseptically. It is quite an easy matter to make a slit in the baby's head that may cause you some hard thinking in order to dig up a plausible explanation for it. Perhaps a long blade of a hemostatic forcep is as handy an instrument as can be used. The rent may be further enlarged with the index finger. The writer has ruptured the membranes with a whalebone bougie.

Before getting too far from the thought again I wish to refer to the folly of the woman bearing down until the latter part of the first stage. From the very onset of pains the woman is inclined to "bear down," or if she does not do so through her intuition some of the attendants are sure to admonish her to "bear down." Women take to this "bearing down" process as a duck does to water. Why? Do they instinctively think it will aid in terminating their labor? No. The main reason for her tugging and grasping the hands of attendants in a frantic bearing down act is that it radiates the center of energy and splits up the pain, thus in some degree mitigating her suffering. During the first stage of labor, which is only the stage of dilatation, the expulsive efforts of the abdominal muscles are futile and tend toward physical exhaustion. The heroic pulling done by women in the second stage is also useless and is energy misdirected. It is true that holding the hands and slightly elevating the head and shoulders in such a way as to brace and steady the patient will afford her a little relief and give the muscles a better chance to contract and relax. During the last few volcanic pains when the head is nearly through the vagina the woman should rather be encouraged to scream. Relaxation of the glottis diverts energy and relaxes muscular tension in the pelvic region, thus making for the safety of the perineum.

A well-arranged toilet procedure for the confined woman makes for the reputation of the physician, just as good gentlemanly deportment and an air of confidence does. Most men who do much obstetrical work use the Kelly pads, but I have known good ones who never owned one. It is inconvenient to carry them a long distance. Then having them cleaned, dried and returned by persons is quite a bother that some do not care to take upon themselves. However, their employment usually finds favor, particularly among esthetic patients. An oil cloth or rubber sheet makes a fair substitute, as well as do several layers of newspapers. A clean sheet should be folded and placed over this, being pinned at the corners with safety pins. This with all the débris are easily removed after the labor is over. The woman should have on a clean gown which during labor is pinned up around her waist.

Post-partum hemorrhage is a rare thing, but it has a way of coming when least expected. It is best to rely upon mechanical aids to get the uterus to contract rather than upon drugs. If hypodermics of ergot and whisky are ready they may be used and later may be given by way of stomach. Adrenalin may also here have a useful place. The uterus should be manipulated through the abdomen with a cold hand. Cold applications to the abdomen are indicated. If the case looks bad a clean hand should be introduced into the uterus to clear out clots and débris. The hand also excites that organ to contract. Ice may be introduced into the cervix. Of course, there is danger from infection, but it is preferable to be infected than dead. A tampon of acetic acid introduced into the womb has many advocates. Vinegar may be found in nearly every home. Phtalate of cotarnine is one of the newer products that is extolled for this purpose. Whatever method or remedy will coax the uterus to contract will close up those open sinuses and control the hemorrhage. It was at one time considered a good routine measure to elevate the woman's hips and also the foot of the bed. This is now thought to be of doubtful utility, as it may possibly hinder the uterus in its contractile powers.

It seems to be a fixed idea the world over that the parturient woman should lie abed nine days. A goodly number think that on the tenth day they can get up and run the sewing machine or put out a washing. I make the reference to those in the mediocre station of life, for there is where we find most of our babies. This nine-day rule needs *judicious* enforcement. It is the writer's opinion that after the first day or so when danger of hemorrhage is past the woman should each day assume an upright posture a few minutes at a time. This should be increased in duration a little each day. It prevents blood stasis, favors the vasomotor system, relieves fatigued muscles, aids secretions and excretions and by force of gravity helps materially in expelling clots and pent-up remains of secundines. The woman should be shown whereby it is to her interest to recline a good part of the time each day for at least thirty days. The process of evolution is a hard matter upon which to speculate. Many women are as able to be up on the third day as others are on the ninth. With many physicians the abdominal band has been relegated to the past. The band certainly has its uses. It is one of our strongest safe-guards against sub-involution and is preventative of a pendulous abdomen. Before confinement it is often quite conducive to the woman's comfort and I always have one applied when a woman is threatened with premature labor.

It has been a time-honored custom to wait until the third day before giving the lying-in woman physic. This is wrong. No one would think of letting any other sort of patient go three days with the greatest excretory function of the body in a locked-up condition. The woman at this time is in a general state of uncleanness, for the function of secretion and excretion has been somewhat perverted temporarily. The smell emanating from her skin, breath, etc., is evidence of this. Castor oil, senna tea, cascara and many other things may be used, and most physicians nowadays administer a laxative within twenty-four hours, there being no contra-indications for so doing. If there is a coated tongue and very great disturbances of the alimentory tract I begin the cathartic with two or three grains of calomel. It acts upon every gland and secretion and greatly obviates the danger of sepsis.

Sepsis should be explained to the lying-in woman as being a result of infection and not due to "taking cold." She and her attendants should be admonished to employ ordinary cleanliness if not strict surgical sepsis. The lying-in chamber should not be kept too warm, as the bathing of the skin in perspiration has a depressing effect and if she should then be subjected to a lowered temperature, as may occur during the night, a chill may ensue. It is not quite a settled matter as to whether a chill is a precurser of sepsis or vice versa.

Absinthe is stated to have been officially expelled from Belgium, and France is considering the advisability of putting an unusually heavy tax upon it.

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MEDICAL REPORTS VIOLATING THE PRINCIPLE OF PRIVACY.

ONE of the fundamental principles of medical ethics is that the relations between physician and patient are essentially for the benefit of the latter and shall not be turned to his disadvantage in any way. As a corollary, it follows that the consultation is a strictly private matter and that anything learned by the physician in his professional ministrations must be regarded as confidential. The attempt has occasionally been made to distinguish between disclosures and discoveries necessary to the professional ministration and those which are incidental and unnecessary. As a general rule, courts of law have decided broadly that any information acquired during professional ministration, and which would not ordinarily have been acquired without it, is confidential. This is a wise rule, for, in the first place, neither the patient in volunteering information nor the physician in asking questions, can determine in advance, just what is necessary and what is irrelevant; and, in the second place, the nature of the relation between physician and patient tends to produce an intimacy of unsual degree, under the influence of which, the patient entrusts the physician with information or renders himself liable to close scrutiny quite comparable to that of an inmate of the family.

Entirely aside from medical ethics, gossiping and tale bearing is despicable and unless the duty of protecting society by giving warning of crime, observed quite aside from his professional relations, seems paramount, it is a good rule for the physician and every one else to keep a close mouth as to the foibles and misfortunes of his neighbors.

We wish to lay particular stress upon the tendency of some medical writers to include in reports of cases, sufficient data to lead to the identification of the patient. For instance, a dermatologist states that Dr. A. B. C. has been treated for an extra-genital chancre; a gynæcologist mentions among his patients a woman whose first name and initials and residence in a village are given so that the most unskilled detective could learn her identity. The most remarkable case of this nature is the publication at length of love letters from a woman employed in an institution for the insane—not herself a patient—to one of the medical staff. The case is described in such a way that identification would be easy for any interested person, and, indeed, there must be quite a number who would recognize the woman at once, if they happened to see the report. The journal, by the way, is a medical weekly of wide circulation. It may be stated in passing that there is nothing in the published letters to demonstrate insanity but merely an unwise and too freely offered affection. It is also admitted that the "patient" has been at large for a considerable time, and is supporting herself without apparently attracting attention as a lunatic in any sense of the word, and that the patients's family do not regard her as insane.

In such an extreme case of violation of the spirit of privileged communications, several comments suggest themselves. The reporter leaves us in doubt as to whether he is giving us an autobiography or a chapter from the biography of a colleague. At any rate, the case does not appear to be strictly an instance of violation of professional secrecy, the addressee not claiming to have cared for the woman professionally. While the letters must have been embarrassing and troublesome, it does not appear that the recipient was subjected to threats or even intrusion to such a degree as to justify him in appealing to the authorities for protection and it seems that, after calling the attention of the family to the state of affairs and giving his diagnosis of insanity, he might have felt that his whole duty had been accomplished. Very many men, especially physicians, clergymen and the like, receive at some time in their life, written offers of affection from women and such letters, though doubtless extremely foolish, are far from being indications of insanity. It seems rather caddish to publish such correspondence, even under the guise of a professional study, although there would be no objection to alluding to them in general terms. Finally, there are so many instances in which one party of a love affair—usually the woman—takes seriously, what the other party intended as a passing diversion, that the publication at length of such correspondence as we have mentioned, is unwise. The reporter takes pains to explain that there was absolutely nothing to warrant the letters, but there are bound to be cynical readers who will ask sarcastically for the other side of the story, and, doubtless, these uncharitable critics will recall in their own experience too affectionate and trusting women whom they them-

selves would like to be able to regard as insane.

In reporting cases, it should be remembered that the professional duty of secrecy is violated whenever any reasonable clue to identity is given. Ordinarily, a brief designation of a case by initials, age, sex, etc., is allowable, even though it is possible for a trained detective, by bribing servants, watching the office, hunting up hospital records, etc., eventually to establish the identity of the patient. Anything unsual in the patient or his disease, should lead to particular care in suppressing details that might establish identity. For instance, there would be no impropriety in saying that Miss Susie K., of Chicago, was operated upon for appendicitis. There would be not only impropriety in saying that Miss Evangeline E. O'R., of Smith's Corners, was curetted for a 3-month's abortion, but such designation would probably be held actionable. (Note. —The names and initials here used are entirely fictitious.)

Sometimes, it seems as if the physician intended to brag of his distinguished clientele and to furnish data that would enable any one reasonably well informed, to establish the identity of the patient. The general line of business, climatic conditions, approximate scale of living, etc., are pertinent points in a case report. But it is certainly unnecessary to designate a patient as "a millionaire steel corporation president," to tell in just what city he lives, or to distinguish a "prominent politician" as Republican, or to describe a woman as beautiful and accomplished, or as a celebrated actress.

It is a good plan to designate cases in tables or citations, by initials or, better yet, by numbers, so as to facilitate reference to records in the event of discussion or of subsequent reporting of progress. Otherwise, designation of persons and places is unwise. In the instances just cited, it would be perfectly proper to state that the first case was that of a man of means and occupying a responsible executive position, if the factors of nutrition, exposure to weather, occupational predisposition and ability to enjoy the refinements of medical aid were concerned in the report. If the patient had slipped and broken his leg, it is difficult to see the bearing of such data. The excitement, possible disappointments and temptations of political life, similarly might or might not be significant in the history; but, except as a campaign joke, reversible to suit the occasion, we can scarcely imagine the affiliation with one or another party to have any medical bearing. Certain nervous conditions would also afflict with different frequency and degree, women in different walks of life, and literary or musical or artistic duties might also act as etiologic factors, but we can scarcely contend that statistic or pathologic results would be influenced by beauty or celebrity or that vague prowess termed "accomplished."

THE OPSONINS.

TO one who had the good fortune to hear Professor A. E. Wright, of London, lecture recently before the Harvey Society of New York City can fail to have been impressed by the earnestness and the scientific acumen of this great physician. He discussed the "Therapeutic Inoculation with Bacterial Vaccines," a subject of most momentous interest to our profession to-day, searching as it is for the best means by which to combat the infectious diseases. Dr. Wright's lecture was but a brief résumé concerning his work during several years past upon the opsonins; this work we can but sketch here, referring the reader to the lietarture for detailed information.* In another column we give the method of obtaining the opsonic index.

We know, with regard to infections, that there are natural anti-bacterial resources within the body not to be found in ordinary culture media. The phagocytosis carried on by the leucocytes is now, we believe, a phenomenon quite unquestioned. But in addition to and in reinforcement of this property of phagocytosis are certain properties inherent in the "bacteriotropic substances" of the blood plasma. We would here enumerate four of these properties—the agglutinic, by means of which bacteria are clumped; that of the lysins, which dissolve bacteria; that of the bactericides, which are germ-destroying; and lastly, that of the opsonins.

The precise nature of the opsonins is as yet not known; their presence is manifested by the effects which they produce. They act upon the bacteria and change them in such a way that they are more readily assimilated by the phagocytic leucocytes than bacteria not so treated. And this change is produced by the inoculation of definitely measured bacterial cultures. For example: A case of acne (staphylococcus infection) was several times inoculated with dead cultures of staphylococci, a complete cure resulting. When the patient was almost well his blood was examined by mixing one volume of it with one volume of freshly washed human leucocytes and one volume of an emulsion of staphylococci. On making smears of this mixture it was found that each leucocyte had engulfed on an average 26 cocci. The same test, when a normal person's serum was used, showed only 13 cocci per leucocyte. The inoculations in this given case had therefore raised the opsonic power of the patient's blood. Regarding the index of the normal individual as 1, that of this patient was 2. Wright's researches have shown that the change is one of the serum and

*Phagocytosis and Opsonins. Hektoen, *J. A. M. A.*, May 12, '06; N. Y. Med. Times, September, '06, p. 285. The Opsonic Index in Medicine. *N. Y. Med. Rec.*, June 30, '06. The Therapeutic Inoculation of Bacterial Vaccines in the Treatment of Tuberculosis. A. E. Wright, *Lancet*, December 2, '05. The Foundations of Serum Therapy. A. E. Wright, *Clinical Journal*, May 12, '06.

not of the leucocytes. To be effective against a given infection the bacterial culture of the germ concerned in that infection must be inoculated; e.g., that of the bacillus of Koch in tuberculosis, that of the streptococcus in septicæmia, etc. The inoculation of a bacterial culture is followed by a decrease in the opsonic power of the blood ("negative phase"); this drop is then succeeded by an increase to a point above the original ("positive phase"). Too large an inoculation is followed by a very marked negative phase; and the subsequent positive phase is insufficient to restore the opsonic strength to the original point. Several such inoculations, or inoculations given at improper intervals of time, will give an accumulation in the direction of the negative phase, the end result being a lower opsonic index than was present originally. But inoculations well-planned as to dosage and intervals of time will give an accumulation in the positive phase and a higher index than was originally present; this should be the practitioner's aim.

Dr. Wright discussed an interesting case of a boy suffering from hip disease. He had not walked for some time prior to the first blood examination, and was carried into the laboratory. Immediately after the blood was drawn for the first test the boy was made to walk briskly about the laboratory for some fifteen minutes. The blood being then again tested, a sharp drop in the opsonic index was found. Then six examinations made subsequently at twenty minute intervals showed that the sharp drop was succeeded by a rise and that after several more slight changes the blood showed a higher index than originally. The exercise which the blood had undergone had evidently induced an autoinoculation—the boy's blood had received some tubercle virus. Wright finds that if such patients are allowed to rest quietly in bed they have no autoinoculations and their opsonic power remains low; and they do not do so well. But if they are judiciously exercised or massaged they become autoinoculated and increase their opsonic index; these cases do well.

It is evident to the practicing physician that the greatest care must be taken in employing such means as these. Full many a fatality, as we know, has followed immediately upon violent exercise in a tuberculous patient. This Wright recognizes. He observes that the good which is done by simple surgical interference is probably due to an increased opsonic index produced by the resulting autoinoculation. We may thus explain the benefit which often follows paracentesis for a tuberculous peritonitis. Wright truly believes that disturbances following exercise or an operation, or massage of a tuberculous joint or of a mass of tuberculous glands may be too severe, resulting in increased severity of the disease. But these dangers, he maintains, are avoided in artificial inoculations, scientifically made.

This principle, upon which Wright works, is a sound one. It is now an established fact of the pathology of infections that every bacterium evolves its own antitoxin, which generally remains potent against the particular infection in question throughout the life of the given individual. This is why, for instance, those who have had smallpox or yellow fever need not fear a recurrence; they are immune.

The eminent lecturer referred to the various methods of combating the infections now at our command—the expectant plan; treatment by means of chemical antiseptics; extirpation; treatment by the determination of lymph to the infected region; the Finsen light; Bier's passive congestion; Koch's old tuberculin; the treatment by anti-sera, inaugurated by von Behring. All of these methods, Wright declares, have their very decided limitations and defects. And in this statement he is quite correct, as every practitioner knows, except perhaps with regard to von Behring's anti-tuberculosis serum. As we have not yet received this product from von Behring's hands, we are not in a position to judge of its merits; we are, however, entitled to hope much for it, recalling as we do the great good which has resulted from his diphtheria antitoxin.

The deliberating reader will conclude, from this sketch, that while the work of our London confrere is worthy of the greatest attention and study, we are not yet in a position to accord it complete approbation. At present the method is so difficult as to be impracticable in general practice; but here, as in all things else, simplification will come with time.

THE DIFFICULTIES OF RESEARCH FOR AMERICAN INVESTIGATORS.

A PATERNAL form of government may be bad for the people, but it is an excellent thing for science. Thus, take Germany, which, as is well known, is the best type of paternalism, the government so controls and encourages all branches of science that as a nation this country is far in advance of all others. Take the history of students in research, inventors, or scientists in England or America and we find a story of individual effort for advancement with no encouragement from the governmental authorities and generally very little from universities or schools. Carnegie and Rockefeller have seen and recognized this lack and have endeavored to supply help from a private source. But private sources must ever be inadequate. This is unfortunate, for it not only retards the investigator, but it prevents him from being a source of inspiration and a disseminator of knowledge to others.

The happy condition in Germany is well expressed

by Dodson in an address some years ago before the medical department of the St. Louis University, published in the *Journal of the American Medical Association*. He writes:

"In Germany, twenty medical schools suffice for the needs of 60,000,000 of people—each is the medical department of a university of which it is an intimate and integral part, and these twenty universities are all under the one central control of the secretary of education for the empire. The admission requirement, uniform for all, is the completion of the course in the gymnasium—about equal to the completion of the sophomore year in our better literary colleges. The course of medical instruction extends over five years, and is in the hands of men who are, uniformly, the recognized masters in their respective branches, the fundamental subjects, anatomy, physiology, etc., being taught by individuals, each of whom employs his whole time and energies in investigation and instruction in his chosen branch. The relation of the medical schools to the hospitals is such that abundant clinical material can be controlled and properly utilized. The medical graduate secures his license to practice by an examination, the *Staats-Examen*, which is uniform for the entire nation, and which is conducted by its ablest teachers who give hours and days each year to this laborious but important duty, subjecting the applicant to thorough practical tests which are in harmony with the methods by which he has been taught and which really measure his ability to practice his profession successfully. The license thus procured is good throughout the empire and its colonies."

This is different from affairs in our own country, where instead of twenty schools we have one hundred and fifty-seven for a population scarcely one-third greater than Germany. These schools graduate about twenty-five hundred more scholars than are needed; the faculties are composed of men who may or may not be well fitted for their position, and the curricula are diverse and often illogical. Again, instead of one board of examiners, we have forty-five, with a general lack of reciprocity. It is true that we are advancing rapidly, but there is still much room for progress.

In consequence, when it comes to research, the American scientist has a hard road to travel. The majority of investigators have been encouraged and sustained by their connection with some great university and have made their discoveries within such classic walls. This is the reason that Germany has been the Mecca of all scientific men for thirty years. These masters became such because they were provided with every opportunity for research, and had freedom to seek the truth.

It is the bold conception of Doctor Dodson that we must recognize that research is a legitimate and necessary function of every medical school. The faculty of such an institution is in duty bound to make contributions to the world's store of facts, methods and principles. To this end, it must number among its members, especially in connection with the fundamental branches, men who are devoting their time and energies exclusivly to research and teaching. Only in this way can there be secured men who are competent to instruct students. Whatever may have been the case in the preceding generations, in our day the real masters of any branch of knowledge are uniformly those who are contributors to that science, and not merely transmitters of the knowledge of previous workers. We need such men, moreover, in the clinical branches, men who, relieved of the burdens of ordinary practice, and supported by adequate salaries, are able to devote their entire time to the study of hospital cases, and to the exhaustive investigation of disease in the hospital ward and laboratory.

These men must not only be given a livelihood, but they must be provided with suitable material and appliances, and with adequately trained assistants. All this means expense, and large expense, too; a cost altogether too great to be borne by the student, the expense of whose instruction has already reached the limit of his means. Moreover, as the fruits of this research are to be enjoyed by the community it is proper that the cost should be borne by the community through private endowment or by the aid of the state.

We are getting more rapidly to this goal than perhaps we realize. Certainly we have made more progress in the past fifteen years than any one would have dared to hope.

THE PREVALENCE OF DISEASE.

At the recent convention of the International Association of Accident Underwriters there was presented a report by a special Committee on Tabulation of Sickness, experience covering 130,918 people, having 37,681,189 days of exposure. This experience covered the year of 1903, which was the latest to be completed in details. It was found that in this group of insured people, largely men, for women are not insured unless wage earners, there were 216,390 days of confinement to the house and 18,008 days of sickness not requiring confinement to the house. Thus it can be seen that of the average business man, about one-half per cent. of his time is taken up by illness, and when he is sick he is confined to the house, for only eight per cent. are reported as not so confined. To the companies on the basis of a five dollar a week indemnity, the cost under these policies was one dollar and forty-nine cents. The analysis of these tables are most interesting; thus, taking one series, there were

the following number of days confined per hundred days of exposure:

Ages.	Days.
10-19	522
20-29	572
30-39	643
40-49	778
50-59	1,230

There is a regular progression in the average number of days sickness per hundred thousand days of exposure with advancing years.

Again when it comes to the prevalence of disease as shown by claims paid, there was paid by all companies claims for typhoid fever to the amount of 33,429 days. Thus typhoid fever is the most prevalent disease for which health insurance is paid in the United States. Next comes influenza with 24,146 days, then pneumonia with 23,447 days, followed by pleurisy with 12,737. Then, curiously enough, comes appendicitis, with 12,609 days of confinement to the house. Bronchitis stands next with 10,244 days. Thus, of prevalent diseases, those of the respiratory tract seem far more prevalent than all others. Such standard diseases as cardiac troubles, diabetes, cystitis, diphtheria, gravel, nephritis, and peritonitis are all far below in the list.

Taking the tables for age, it is interesting to note the prevalence of diseases at the various periods of life. Thus, typhoid fever shows its greatest prevalence from twenty to twenty-nine, with 963 days, dropping in the thirties to 743, to 186 in the forties and twenty-eight in the fifties. Influenza, on the other hand, is most prevalent in the forties, while pneumonia is reported in the largest number in the thirties, as is pleurisy. Appendicitis is also more prevalent in the decade from thirty to forty. Bronchitis, on the other hand, is more prevalent in the "forty year" group, while such diseases as seem more common in old age are found often more prevalent earlier; thus, locomotor ataxia is reported more frequently between thirty and forty than at any other age; gravel, curiously enough, is most frequent in the twenties, and rheumatism in the thirties.

Of course, in one sense, these tables can be misleading, for the average age at which a man insures is generally in the thirties or forties. Insurance, as a rule, of any kind, does not appeal to the young, and it is expensive for the old. But when a man has gotten into the thirties, he is, as a rule, more thoughful, less likely to take risks, and to have a family dependent on him. Hence, there being more men of thirty or forty insured, naturally more illness is reported from these ages. There may be as much disease in the twenties or the fifties, but these cases are not insured; on the one end the applicant is shy, on the other end, the company, for few companies insure for health over sixty, unless the applicant passes a good physical examination.

STATE CONTROL OF DISEASE.

POLITICAL parties may dispute the idea of centralization of power as did the Democratic party during the Civil War, but in medicine is indisputably the most efficient method of fighting disease. State boards of health are absolute necessities, provided they are given full police power.

In the recent reform legislation in Pennsylvania there was established a department of health which was given great power throughout the State for the correction of sources of contamination and the removal of foci of disease. The State was divided into districts, and all regions not provided with local boards of health are obliged to report direct to the State capital all contagious diseases, births, deaths, etc. In addition the department has a staff of efficient officers who disinfect after contagious disease and inspect drains and water supplies. Already in a tour of inspection of the Schuylkill River, which supplies the drinking-water of Philadelphia, fifteen hundred sources of pollution were found and removed. Also the department supplies free antitoxin for diphtheria cases to the poor.

As a result, the recent report of scarlet fever and diphtheria is interesting. While these diseases occur most frequently in the winter months and during the school period, there was a marked decline this year during this period, when they ordinarily reach their highest points. Thus, in January there were one thousand and forty-two cases of diphtheria reported for the entire State, or a monthly rate of fifteen and thirteen hundredths per one hundred thousand of the population. This sank to twelve in February, or only eight hundred and eighty-five cases; then in March to eight hundred and fifty cases, and seven hundred and three in April, or a rate of ten and twenty-one hundredths. The disease was still less in May, showing six hundred and eighty-eight cases, and so on down to August, with four hundred and sixty-one cases, or six and sixty-nine hundredths, less than half that of January.

Scarlet fever was reduced at almost as good a ratio. Thus, in January there were eight hundred and seventy-nine cases, or a ratio of twelve and seventy-six hundredths to one hundred thousand of the population. The ratio crept down through the winter and spring months until it reached three hundred and fifty cases in August, or five per one hundred thousand.

It is an interesting and curious fact that the decrease in scarlet fever was quite as good as that of diphtheria, although no antitoxin for the former disease was used. It would be interesting to know the relative mortality, but that is not given. Undoubtedly, however, it is far lower in diphtheria.

The instructions sent out to the patient's family in cases of typhoid fever are so excellent and so judicious that they are quoted here, not because they contain anything new, for they say nothing of treatment, but simply suggest the destruction of the contaminating agent, and every farmer and laborer throughout the State gets this instruction, backed by the authority of the State government.

Wipe out typhoid by killing the germs in the bed-pan. Commonwealth of Pennsylvania, Deparment of Health. Circular No. 2. Rules to be observed by nurses and attendants in charge of persons suffering from typhoid fever.

Place the patient, if possible, in a well lighted and well ventilated room. Remove from the room all superfluous articles of furniture and draperies. Kill the typhoid germs contained in the discharges of the patient before they leave the sick-room to lay other fellow beings low with this disease. Secure any of the following disinfectants: Kreolin, Lysol, tri-kresol, chlorinated lime (chloride of lime or bleaching powder), or a 40 per cent. solution of formaldehyde which is preferred. Make up disinfectant solutions from the above by adding three teaspoonfuls of kreolin, lysol or tri-kresol or eight teaspoonfuls of the 40 per cent. solution of formaldehyde to a pint of water, or one-half pound of chlorinated lime to one gallon of water. Keep constantly in the bed-pan, urinal, chamber or commode or vessel intended to receive the discharges from the bowels or bladder, a moderate quantity of the disinfectant solution selected, and after receiving the discharges add a quantity sufficient to equal the amount of the discharges. Cover and remove the vessel and allow the contents to stand for one hour before emptying the same. Never empty the discharges upon the surface of the ground, or into a stream, even though disinfected. If the discharges are emptied into a water closet or privy they must be thoroughly disinfected first. They must never be buried until after being thoroughly disinfected and then never less than one foot deep nor within one hundred feet of a well or water course. If a privy well is used, empty three gallons of any of the disinfectant solutions into it daily. Keep constantly on hand a basin or other vessel containing one of the solutions mentioned for the purpose of washing your hands. Wash your hands in the solution immediately after handling the patient, the discharges or any of the body clothing. Keep constantly in a convenient place a tub or other proper vessel containing a sufficient quantity of one of the disinfectant solutions in which to soak all of the patient's bed and body clothing. (If chlorinated lime is used for this purpose, one-half pound should be diluted with eight gallons of water.) Place all such clothing in this vessel immediately upon its removal from the bed or body of the patient, leaving it in the disinfectant solution for at least three hours, after which it should be boiled thoroughly for at least one hour. Do not permit the use by others of drinking vessels or eating utensils used by the patient, until boiled for at least one hour. Do not eat or permit others to eat scraps or remnants of food left by the patient. Burn all such material at once. Add a disinfectant solution to all water that has been used for bathing the patient, and dispose of it in the same manner as the body discharges. Do not throw this water on the surface of the ground. Thoroughly disinfect all discharges from the mouth and nose. If received in vessels treat as all other discharges. If received in handkerchiefs treat as bed clothing, or if received in old linen burn the same at once. Thoroughly screen the room to exclude all flies and mosquitoes. Destroy all insects in the room. Exclude domestic animals. Do not kiss the patient. Do not encourage visitors to the sick-room. Aside from their disturbing influence on the patient they may through carlessness contract the disease. Boil all water used for domestic purposes. Follow these rules during the entire illness; do not relax them during convalescence, but continue until entire recovery, as the specific germ of typhoid may exist in the stools or urine of typhoid patients for at least four weeks after the disappearance of the fever.

These rules are clear, exact, practical and easy to follow without expense. Now, every home on every hillside in the Keystone State must follow them, without regard to the individual opinions of the occupants. There have been in late years many epidemics of typhoid coming through milk from infected farms. The State commissioner detected at once many such cases; thus one milkman supplied the main line towns of Pennsylvania; the commission found many cases developing in one or two towns and at once traced it to this one farm. They found the proprietor in bed with typhoid and his hygienic arrangements as to the handling of milk deplorable. There is now such a dearth of farm hands that any farmer is glad to employ any dirty tramp from the pike, if he can milk. Over a hundred cases developed from this one focus, but it would have been undetected if not for the State board. Professor Dixon is deserving of great credit for the work he is doing. He has stirred up much opposition and the anti-vaccinationists are trying to make a political issue of his efforts against smallpox, but so far without effect.

BIBLIOGRAPHICAL

A Primer of Psychology and Mental Disease.—For Use in Training Schools for Attendants and Nurses and in Medical Classes, and as a Ready Reference for the Practitioner. By C. B. Burr, M.D., Medical Director of Oak Grove Hospital (Flint, Mich.) for Mental and Nervous Diseases; Formerly Medical Superintendent of the Eastern Michigan Asylum; Member of the American Medico-Psychological Association; of the American Medical Association; Foreign Associate Member Societie Medico-Psychologique of Paris, etc. Third Edition. Thoroughly revised, with illustrations. Pages viii-183, 12mo. Bound in extra vellum cloth, $1.25 net. F. A. Davis Company, Philadelphia.

This is an excellent little book for its purpose, containing only the A B C of its subject. The section on Psychology has been thoroughly revised, and that on Forms of Disease rewritten to accord with the newer classification of the insanities. The subject of medical treatment is discussed in the interest of the medical student.

Diseases of the Stomach.—A text-book for practitioners and students. By Max Einhorn, M.D., Professor of Clinical Medicine at the New York Post-Graduate Medical School and Hospital; Visiting Physician to the German Hospital. Fourth revised edition. Octavo; 559 pages. Price, $3.50. New York: William Wood & Company, 1906.

This valuable work appears in its fourth edition, thoroughly revised and with several additions made. It contains a most practical and up-to-date presentation of a subject which is not exceeded in importance by any in the practice of medicine. The book has been written in the interest of the general practitioner, to whom it should appeal. The subject is approached from the practical viewpoint, and special attention is paid to diet and treatment. We commend the work to our readers with great satisfaction.

A Syllabus of Materia Medica.—Compiled by Warren Coleman, M.D., Professor of Clinical Medicine and Instructor in Materia Medica and Therapeutics in Cornell University Medical College, etc. Third

edition revised to conform to the eighth decennial revision of the U. S. Pharmacopeia. 16mo; 186 pages. Price, $1.00. New York: William Wood & Company, 1906.

On account of the numerous changes the text of this little volume has been completely reset. The rapidity with which the editions are exhausted shows that the book is appreciated. It is a handy book for ready refence in this department.

Retinoscopy (or Shadow Test) in the determination of refraction at one meter distance, with the plain mirror. By James Thorington, A.M., M.D., author of "Refraction and How to Refract," "The Ophthalmoscope and How to Use It," Professor of Diseases of the Eye in the Philadelphia Polyclinic, etc. Fifth edition, revised and enlarged. Fifty-four illustrations, ten of which are colored. 67 12-mo. pages. Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1907.

This little book should be in the hands of every practitioner who attempts to do any work upon the eye. The present edition has been thoroughly revised and brought fully to date.

Stohr's Histology.— Arranged upon an Embryological basis. By Dr. Frederic T. Lewis, Assistant Professor of Embryology at the Harvard Medical School. From the twelfth German edition. By Dr. Philipp Stohr, Professor of Anatomy at the University of Würzburg. Sixth American edition, with 450 illustrations. 434 octavo pages. Price, $3.00. Philadelphia: P. Blakiston's Son & Co., 1906.

The rapidity with which the editions of this valuable work have been exhausted shows that a text-book of histology arranged upon an embryological basis has met a long-felt want and become a leader of its class. The additions and changes made by the translator seem to have struck the key-note of practicability. The text is well rendered, and the illustrations excellent. We must again commend the book to our readers.

Rhythmotherapy, or a Discussion of the Physiologic Basis and Therapeutic Potency of Mechano-vital Vibration; to which is added a Dictionary of Diseases, with Detailed Suggestions as to the Technic of Vibratory Therapeutics, with illustrative plates. By Samuel S. Wallian, A.M., M.D., Chicago. Price, $1.50; postage, 10 cents. Ouellette Press, 1906.

Mechanical Vibration as a remedial measure has won a very respectable recognition. The literature on the subject has been desultory and unsatisfactory. This author, with something of an iconoclastic spirit, sets out with a curt and incisive protest, in lieu of a preface, and at once plunges into his argument.

A "Dictionary of Diseases" intelligently discusses the technic vibratory treatment, and as a whole the volume is a valuable contribution to the subject. Its perusal will be interesting to those who have as yet given scant or no attention to the subject.

The Ear and Its Diseases. A Text-Book for Students and Physicians. By Seth Scott Bishop, B.S., M.D., LL.D., Honorary President of the Faculty and Professor in the Post-Graduate School and Hospital of Chicago; Surgeon to the Post-Graduate Hospital and to the Illinois Hospital, etc. Illustrated with 27 colored lithographs and 200 additional illustrations. Royal octavo; 440 pages. Bound in extra cloth. Price, $4.00 net. F. A. Davis Company, Philadelphia, Pa.

This book presents the diseases of the ear in a concise, plain, and copiously illustrated manner, for the use of the medical student, for whom it has been specially designed as a text-book. We heartily commend the book for its purpose.

Studies in the Psychology of Sex—Erotic Symbolism, the Mechanism of Detumescence, the Psychic State of Pregnancy. By Havelock Ellis. 6⅜x8⅞ inches. Pages x-285. Extra cloth, $2.00, net. Sold only by subscription to physicians, lawyers and scientists. F. A. Davis Company, Philadelphia.

In this volume of his series the author discusses the terminal phenomena of the sexual process preparatory to conidering in the concluding volume, the bearings of the psychology of sex in that part of morals which may be called "social hygiene."

The subject is approached from the very topmost plane, and culminates in the one physiological act in which two individuals are lifted out of all ends that center in self, and become the instrument of those higher forces which fashion the species, an act that can never be passed over as trivial or unworthy of study.

The author has made a brief study of "The Psychic State in Pregnancy," the point at which the whole process of sex reaches its goal.

These books are commended as interesting, instructive, and worthy of study.

CORRESPONDENCE

RECENT VIEWS ON THE TREATMENT OF UREMIA.

To the Editor of THE MEDICAL TIMES:

One of the most interesting chapters of Bouchards's last work is that in which he details his views on the treatment of uremia. He attacks the idea that the function of the kidneys can be supplemented by stimulating excretion by other channels. By these we eliminate only such toxins as are normally ejected through them, and of the urine only the water. This would be better employed by the kidneys, so that we really increase toxicity by increasing perspiration. But he fails to take into account the increase in the excretion of solids occasioned by diaphoretics. Pilocarpine, for instance, increases fivefold the solid excretion through the sweat, so that instead of removing only one-tenth as much as the same quantity of water would if ejected through the kidneys, there is fully one-half as much excreted in the perspiration.

Renal congestion may be lessened by the use of revulsives; reflex nervous irritability subsides under friction applied to the skin; and such drugs as digitalin and caffeine may act through the nervous centres. But when the excretory action of the kidneys is impeded drugs may be retained and drug-intoxication ensue. Digitalin only succeeds when heart weakness coexists. If given at all it must be in doses sufficient to accomplish the object, yet small enough to allow complete suspension of action before serious danger can result when evidence of harm appears. In gastrointestinal forms digitalis is of course contraindicated, but there is no reason for discontinuing pure digitalin, which is not irritant.

The almost stagnant blood in the portal roots may be forced into the general circulation to elevate the gen-

eral vascular tension and thus increase renal activity; by the use of cold enemas, by which grave anurias may be relieved; or by cold drinks, especially of milk. Urea, administered subcutaneously or intravenously, is one of the most powerful of diuretics.

Just as digitalin acts only as a diuretic when the heart is weak and the vascular walls so flabby that a part of the heart's force must be utilized in forcing them open, so digitonin acts only and exclusively in the contrary condition. If the tension in the renal arterioles is excessive, as when a patient is fully under the influence of digitoxin, the supply of blood is cut down until the urine may be totally suppressed. Here digitonin by relaxing this contractile spasm frees the renal circulation and restores the excretion. It is evident, therefore, that while both these foxglove derivatives are diuretic it is in totally opposite conditions, and that under no circumstances can they both be utilized at the same time in the same case. If given together the principle present in greater relative strength will exert its effect, *minus* that of the other; and the change of benefit being obtained lies in the change of such action coinciding with the corresponding pathologic condition. Since it is perfectly easy to ascertain whether vascular tension is above or below par, and digitalin and digitonin can each be readily obtained, there is no excuse or need for such hazards.

How about the stomach and bowels?

Vomiting lowers vascular tension and increases perspiration, and both are undesirable in urinary deficiency. Purgatives remove water, and this also, Bouchard claims, should be retained to pass out of the body by way of the kidneys, by which route it would have removed fifty times more of the toxins than it could through the bowels. The latter also remove some of the toxic matter from the cells and the blood, as well as very much that would else have been absorbed from the bowel to pass out through the kidneys. But care should be taken to at once restore the lost water.

Bleeding? With thirty-two grams of blood we remove half a gram of extractives; the urine in each twenty-four hours removing eight grams. We may thus keep the toxins below the fatal dose—the killing point. This is our most effective measure, for thirty-two grams of blood remove as much as two hundred and eighty grains of liquid diarrhœa or one hundred of sweat. Bleeding is best for acute nephrites like those occurring from scarlatina, where the emergency is but temporary. In chronic forms it is only applicable in emergencies, to delay death.

Chloroform, chloral and the bromides (never that of potash), are useful only in the convulsive forms, such as eclampsia, not in the comas. All potash salts should be excluded, even the nitrate.

Of all the weapons herein named, we have left, therefore, only bleeding for certain contingencies, and the milk diet. Yet something may be done in the way of pathogenic therapeutics; some indications met by recognizing the sources of the uremic poisons—disassimilation, hepatic products, alimentation, and intestinal putrefaction.

Can disassimilation be delayed by arsenic and valerian, which lessen nutritional metabolism and thus save wear and tear? But here the disease has already done this, to such an extent as to cause subnormal temperature, toxin-accumulation checking osmosis. Any further impediment to oxidation tends toward death, for the specially dangerous toxins are due to suboxidation. Increased metabolism by oxygen inhalations reduces the toxicity; and this has been advised.

We can lessen the secretion of bile by the milk diet; by saline purgatives wash out the bile formed; or, as the toxic part of bile lies mainly in the coloring matters, we may remove them by giving enough charcoal.

The proportion of toxins derived from the food may be diminished by the use of such foods as are poor in its principal toxic element, potash. Give foods quickly and easily digested and absorbed, foods poor in extractives and potash, which do not supply to intestinal putrefactive agents materials suitable for their noxious work—avoid meats and give milk, with egg-white, cheese or even boiled meats if necessary, but no soups.

Lastly, we prevent intoxication from intestinal putrefaction by reducing the intake of putrescible material; by favoring the formation of hard, dry fecal masses from which absorption will be the minimum; in other words, by milk diet. We can fix the toxins in the bowel and prevent their absorption by the administration of charcoal; and directly oppose putrefaction by inducing intestinal antisepsis. For the latter purpose he advises iodoform, charcoal, naphthalin, and bismuth salts. Bouchard says: "I myself have seen, in one case, formidable uremic dyspnœa disappear within twenty-four hours after the administration of naphthalin."

On strictly *a priori* grounds, Bouchard requires that the ideal intestinal antiseptic shall be insoluble, in order that it may pass through the alimentary canal so as to be present and active in the large bowel, where its service is most needed. With this we cannot agree, for the following reasons: All agents acting chemically must be in solution or they are inert. Charcoal acts solely through its remarkable power of absorbing into its bulk gases, alkaloids, coloring and other matters. These are held by the charcoal and ejected with it from the body. The sulphocarbolates in solution may be absorbed from the upper bowel, but they are in large part thrown back into it and appear in the feces. Their administration is followed by deodorization of the stools, with corresponding improvement in the condition of the patient in a manner too decided and invariable to admit of any but a causative explanation. Their use entails no danger to the patient whose renal elimination is restricted, or to the blood if they should be absorbed in large quantities. Being effective, safe, cheap, and (when chemically pure and taken in hot water) practically devoid of objectionable taste, they afford advantages not offered by any other intestinal antiseptic as yet presented.

Bouchard says that charcoal presents many advantages, but it must not be forgotten that this substance is totally insoluble, and that it is apt, if given in large quantities, to form obstructing masses in the bowels, which are not acted upon by any solvent that can be administered. To avoid this danger, and because the sulphocarbolates are quite as effective if not more so, pleasanter to take and easier to administer, while agreeing with Bouchard in his general conclusions, we do not agree with him in his choice of agents to effect the desired ends. When the profession awakes to the efficiency and utility of the sulphocarbolates and gives them its endorsement, as it surely will, the lesson we have inculcated these many years will have been mastered.

Croftan views the matter in a different light. He believes that uremia should be assigned to insufficient action of the liver rather than to renal defects. The liver produces urea, and intercepts and turns back absorbed toxins into the bowel for elimination. To these the bitterness of the bile is due. Uremia he interprets as due to a crippled liver with low renal activity. The liver is crippled by excessive absorption of gastrointestinal toxins; and a rational treatment is to reduce the labors of the great gland by non-irritating diet—and here he coincides with Bouchard in advocating the exclusive use of milk. After a period of hepatic rest he applies mild stimulation by giving salicylates and the bile acids, admitting the possibility of benefit from calomel also.

Both writers, however, are playing the play with Hamlet omitted. No single remedy compares with veratrine in this malady. In the acute forms like eclampsia, it behooves the physician to act quickly and limit the damage that is being done to the delicate nervous tissues. One man advocated two dram doses of tincture of veratrum, and another reported to the writer that he invariably gave hypodermically a dram, repeating if necessary. Imminent peril demands quick and powerful intervention, and nothing except possibly bleeding as well meets the need. Merck gives the maximum single dose or veratrine at gr. 1-12, and the maximum daily dose at gr. 1-3, but the need must regulate this, and quick repetition soon indicates the proper quantity for the case. No one who knows eclampsia by personal experience will fear veratrine after he has become familiar with it.

In non-acute forms also veratrine is worthy of confidence, since it acts on all the excretory organs and opens up elimination as no other remedy does, at the same time relaxing arterial tension to any desired degree. Small doses are best—gr. 1-134 well diluted every one to six hours, as the effect on the pulse indicates. To the physician who has learned to value elimination properly, veratrine gets to be a daily resource; sure, safe, unfailing, most easily given and controlled.

W. C. Abbott, M.D.

Chicago, Nov., 1906.

SANITATION AND TUBERCULOSIS.

To the Editor of the Medical Times:

An esteemed medical journal characterizes as the height of asininity a local health ordinance which forbids barbers to shave consumptives in their shops. We fail to see where the asininity appears. A consumptive, at least in any tenable legal sense, means a person who is discharging tubercle bacilli in the sputum. A person may be tuberculous and yet not have any demonstrable route of elimination of tuberculous débris, but such a person certainly could not be proved to be tuberculous so far as any sanitary laws based on the theory of infectiveness are concerned. We do not believe that tuberculosis is a highly contagious disease comparable with the exanthemata, but we do believe that its real cause is the tubercle bacillus and that no combination of predisposing causes, such as catarrh, anæmia, hereditary predisposition and general depression, is competent to produce the disease. We may go farther than this: many animal parasites are capable of producing disease only in certain stages of existence or when injected by an intermediate host but, so far as we are aware, any vegetable germ is always in a condition to produce infection, unless it is dead or of feeble virulence, granting, of course, that receptive conditions are favorable to its invasion. We also believe that Nathan Raw and other investigators have shown that there is this element of truth in Koch's sweeping statement as to the inability of bovine tuberculosis to produce human disease, viz.: that the tubercle bacillus cultivated for generations in one animal is, usually, especially virulent toward that species and that, in the human, we have two rather distinct varieties of tuberculosis, one locating in the lungs and due to infection with the human variety of bacillus and one locating in the intestine, joints, connective tissues, etc., and due to the bovine variety, though such a distinction cannot as yet be held to be absolutely proved, and it probably will not be proved to apply to all instances.

For practical purposes, tuberculosis in the human being means consumption in at least 80 per cent. of all cases; and probably 90 per cent. of all cases of human tuberculosis are due to bacilli pretty directly derived from human sputum. In any individual case, it is almost impossible to ascribe a case of tuberculosis to a single, specific infection. This is due to the frequency of the disease, the lack of quarantine measures and the insidiousness with which the disease develops. But, after all, it is largely a matter of habit that leads us to adhere to the theory of personal contagion in measles and to be sceptic as to a personal source of tuberculosis. For instance, John Jones, Sr., works in the same shoe factory as William Smith, Sr., who is a consumptive. If John Jones, Sr., develops tuberculosis and it occurs to some physician or sanitarian to question the advisability of allowing men like William Smith, Sr., to work in places where they may infect their fellows, there are plenty of sceptics to ridicule the notion and to ask for proof that John Jones, Sr., did not receive his tubercle bacilli from some unknown source in street dust. But, if Johnny Jones, Jr., plays with Willie Smith, Jr., who has measles and, within a week or ten days, "comes down" with the same disease, there being no other known cases among his schoolmates and playmates, no one seriously questions where he got his measles. As a matter of fact, we can no more prove, scientifically, the latter supposed route of infection than the former unless we can absolutely exclude the existence of measles in the region for years previously as well as other recent sources of importation. We are also likely to forget that being able to name the person from whom an exanthem is contracted and being unable to name the one from whom tuberculosis is contracted, has nothing to do with the matter of communicability nor with the importance of checking all sources of germs of disease.

As we have already said, we fail to see why it is asinine to prohibit the use of public barber shops by consumptives. Persons expectorating tubercle bacilli are certainly likely and, in the long run, almost certain, to have bacilli lodge in mustaches, beards or even in the stubble for which they have recourse to the razor. Barbers are not, as a rule, a class who can be depended upon to use careful asepsis and antisepsis by heat, of such perfection as to kill such bacilli as may be

present. To our mind, there is nothing asinine in the assumption that brushes, combs, lather brushes and razors may transplant such bacilli to previously healthy persons. We are personally asinine enough to believe that it is conceivable that such bacilli may actually be implanted in a razor wound or within the beginning of the respiratory or alimentary tract by a daub of the lather brush and that bacilli thus implanted stands just as good chances of growing as if they had been implanted experimentally in an animal of the same resistance as the person in question, or as if they had reached the same parts of another human being by purely accidental means. We would not go so far as to claim that it was suicidal to be shaved or to have one's hair cut with the same utensils just used for a consumptive, but we do claim that such utensils are likely to be infected and that, if infected, the bacilli which they convey are just as apt to grow as others which come from some unknwn and practically unavoidable source.

Entirely aside from the direct danger of implantation of tubercle bacilli in shaving and hair cutting, barber shops are usually not too well ventilated and they are places where all sorts of persons are thrown into close and rather prolonged contact, where expectoration is frequent and not confined to properly disinfected cuspidores. All modes of possible infection by dust, dried sputum, contact with towels, etc., are present to a considerable degree. In other words, the barber shop is just to type of meeting-place for humanity, from which persons with any communicable disease ought to be excluded. It may not be feasible, at least for many years to come, to insist upon a rigid quarantine against tuberculosis and, until this theoretic desideratum is attained, it is impossible to prevent consumptives from attending church and theatre, where there is a very trifling danger of contagion, if the filthy habit of spitting on the floor is stopped and to exclude them from vehicles, hotels, toilet rooms and other necessary public places.

The exclusion of consumptives from barber shops deprives them of no absolute necessity, for they can be shaved and their hair can be cut at home. Meantime, such legislation removes one element of possible danger and it has an educational value by pointing out to consumptives, their friends and the public generally, that a tuberculous discharge is a source of danger.

It is possible to draw an approximate, arithmetical comparison between tuberculosis and the exanthemata, so far as communicability is concerned. Barring immunity by hereditary of an exanthem or by heredity of its antiparasitic substances from a mother recently the subject of the disease, immunity established artificially by vaccination, and natural immunity of rare and unexplained nature, the susceptibility to a first attack of an exanthem is nearly 100 per cent., the susceptibility to a second attack not much more than 0 per cent. and the mortality about 10.20 per cent., excepting for varicella, German measles, etc. Exclusive of persons dying of violence, the susceptibility to tuberculosis is shown by all statistics of civilized countries to be 12—20 per cent. and there seems to be just as great susceptibility to subsequent attacks, excepting that we must consider the extreme rarity of a chance for reinfection, owing to the high mortality of tuberculosis—75—90 per cent. From a purely theoretic standpoint, we may say that the susceptibility of tuberculosis is nearly 100 per cent., but that, in the majority of cases, the disease does not cause clinically recognizable symptoms. It is impossible to define just what constitutes a single exposure or to state what risk attends such an exposure. The chance of contracting tuberculosis from any single, ordinary, brief association with a consumptive is certainly very slight, while similar association with a person having an exanthem is considerable, perhaps 50 per cent. In the long run, owing to the immunity conferred by an exanthem, we may easily calculate the infectiveness of an exanthem to be about 5—8 times as great as that of tuberculosis. On the other hand, the census statistics show that all of the exanthemata together cause only about a fifth of the deaths ascribed to tuberculosis. In fact, tuberculosis, in its various forms, causes at least a tenth of all deaths, including those due to weakness at the extremes of life, accident, violence, surgical intervention, etc. Of the causes of death that may fairly be included under the term disease, it is responsible a quarter or a fifth.

It is the tremendous importance, quantitatively as well as qualitatively, of tuberculosis, its enormous expensiveness and high mortality, that inclines us to welcome every measure to lessen its frequency. A precaution that will prevent one case in a thousand is of as great importance as one that will eradicate an entire disease like Rotheln or varicella. And any inconvenience or suffering imposed upon a consumptive is counterbalanced and more than attoned for, by saving another person from the disease.

B.

The prophylaxis of senile cataract is dwelt upon by O. Wilkinson (*Gaillard's Southern Medicine*), who would not permit a patient with incipient cataract to go untreated until blindness is fully developed. He concludes, after an exhaustive study of cases, that cataract is a result of a disease of the eye, or some constitutional disorder, which should be treated as is any other disease. He does not look upon the cataractous lens as an excessive change due to age; the changes are chemical, not morphological. The treatment of the cataract should be both constitutional and local. Any condition that is found to be interfering with the patient's general health should be attended to. Every organ that may possibly be the seat of disease should be examined; gouty, rheumatic or lithæmic conditions should be sought. The digestive system is one of the most frequent sources of systemic poison. Alteratives, tonics and a free use of lithia and other alkaline waters are recommended. Iron, quinine, strychnine, or gentian may be indicated. Exercise in the open air is essential. There may be associated ocular diseases; errors of refraction and accommodation must be corrected. A proper lens does more than any other remedy for low-grade inflammations of the uveal tract. These patients should use their eyes sparingly; for the cataractous organ must be considered a diseased one, requiring rest. The preventive phase of cataract treatment has, in Wilkinson's opinion, not yet received its full share of attention. (We are glad to note here the expressions of an ophthalmologist who evidently realizes—as does not every one—that the eye cannot be treated as an entity separate from the rest of the organism, but that successful treatment of it requires a respectful consideration of general systemic conditions.)

RETROSPECTIVE

The Opsonic Index is obtained by the following method (*Jour. A. M. A.*, June 9, '06): A certain amount of the patient's serum is mixed with the same amount of a suspension of blood corpuscles, washed three or four times in physiologic salt solution (to remove all traces of plasma or serum); to this mixture is added a small quantity of a homogeneous suspension in salt solution of the particular bacterium on which we wish to test the opsonic power. The mixtures for the control tests are made precisely in the same way, except that in one the serum of a normal person is substituted for that of the patient, and in the other the serum is replaced by physiologic salt solution. After thorough mixture of the ingredients these mixtures are placed at 37° C (98.6 F), for about 30 minutes, when smears are made and stained. The average number of bacteria taken up by the leucocytes is determined by counting the number of bacteria in, say, 40 leucocytes from each mixture and dividing the total number of bacteria obtained in this way in each case by the number of leucocytes counted. The opsonic index is the relation of the number of bacteria taken up by the leucocytes in the mixtures containing the patient's serum to the number taken up by the lecocytes in the mixtures containing the normal serum. This explanation is illustrated by the following:

(Average phagocytosis, 40 leucocytes counted.)

1. Serum of tuberculous patient 0.1 c c + washed blood 0.1 c c + suspension of t.b. 0.1 c c..... 3
2. Serum of normal person 0.1 c c + washed blood 0.1 c c + suspension of t.b. 0.1 c c..... 4
3. NaCl. solut. 0.1 c c + washed blood 0.1 c c + suspension of t.b. 0.1 c c..... 0.1

In this case the opsonic index of the tuberculous patient is .75 (3÷4=.75); if the figures are reversed the index will be 1.33 (4÷3=1.33), as compared with 1, the normal index. The result indicated in the third mixture emphasizes the fact that in the absence of serum there is very little phagocytosis. One must make sure that the corpuscles used have been washed quite free of serum; and this is the reason for the third mixtures.

The blood is obtained easily from the lobe of the ear, a few drops being collected in a small u shaped tube that is centrifugated in order to free the corpuscles from the plasma which is withdrawn with a fine pipette. The corpuscles can now be washed in salt solution. In order to prevent all clotting a small amount of citrate solution may be mixed with the blood, but this is not essential. The point is that the various mixtures must be so made that the results are comparable. The mixing may be done in small pipettes marked so that the same quantity of the various ingredients may be drawn in. After mixing thoroughly by drawing the fluids in and out, the pipette with contents is placed in the incubator. It is quite impossible to describe all the details which must be learned by practical work in the laboratory. Thus, the preparation of uniform suspensions of tubercle bacilli requires special methods (Wright, *Lancet*, 1904, vol. ii., p. 1138). In the case of other bacteria the main points are to secure uniform suspensions of proper density. If too many bacteria are present, the leucocytes may be so crowded with bacteria that the latter cannot be counted with accuracy.

Eclampsia.— Clark (*Jour. Gynec. and Obstet.*, July, '06) very wisely counsels that, as the first step in the prophylaxis of puerpural sepsis, women should engage their physicians early in pregnancy; and that the latter should examine carefully the condition of the kidneys, among much else to which he should attend. The patient must measure carefully the quantity of urine passed and must send samples at least once a month; she must notify her adviser at once of persistent headache, difficult vision, nausea, diarrhœa, marked anæmia and œdema, especially of the hands and face. With the development of these symptoms or any one of them, the patient is given a saline and is put at once thereafter on a milk diet with large quantities of water. Improvement, especially in the condition of the urine, will justify the addition of some of the more easily digested starchy foods. With severity of these symptoms despite this treatment, rest in bed is indicated, with daily warm baths and at times hot packs. If the case still progresses unfavorably labor must be induced without delay. Where labor comes on without convulsions, though these be threatened, chloral is administered as conditions indicate. If the urine during labor is very albuminous such measures should be adopted as in the presence of convulsions—operative delivery, saline purgatives, hot salines subcutaneously and hot packs. If marked albuminuria and toxemia appear early in pregnancy Clark believes that the uterus should be emptied; and on general principles his position is sound.

Blair believes that a toxin or a series of toxins manufactured by mother and fœtus, and not properly eliminated by the kidneys, is the chief cause of eclampsia (*Liverpool Medico-Chir. Jour.*, July, '06). The mortality is from 18 to 42 per cent. for the mother and 50 per cent. for the children. It occurs once in 330 labors in England; once in 260 labors in the United States; and is more frequent in cases of illegitimacy. It is commonest in primiparæ, in protracted labors, in neurotic temperaments, in multiple pregnancies. The onset is from the eighth month to the end of pregnancy, though it may occur at any time after conception, or during the puerperium. Prodromal symptoms are albuminuria (with low specific gravity), visual disturbances, vertigo, headache, drowsiness, depression, epigastric pain, jaundice and vomiting late in pregnancy. There is a preliminary stage to the eclamptic attack, manifested by convulsive movements of the face, head and arms, etc., which last for a few seconds to a minute or more and are followed by a tonic stage—rigidity, with the head drawn backward and the posture of opisthotonos. Respiration ceases for some fifteen to thirty seconds when a clonic stage of general convulsive movements intervenes. The coma becomes more profound as the fits increase in number, the pulse becomes weak and intermittent, and the temperature has a tendency to rise. The diagnosis from epilepsy is made by the absence of eclamptic prodromata, nor is there a steady increase of temperature; from hysteria, which is characterized by the rationality of the convulsive movements, the absence of respiratory spasm, and the passage of larger quantities of urine; from alcoholism and from disturbances of the central nervous system. Blair's prophylaxis coincides with that of Clark. He would during critical periods give morphine hypodermically, and would use chloral in large doses. Chloroform will relieve spasm, but is rejected as a routine measure. Hot salines may be given by hypodermoclysis, or by the bowel; transfusion may have to be practiced. Venesection may be essential (v. editorial in this issue of THE TIMES). Lavage of the stomach and hot packs may also be appropriate.

Excision of the right lung for tuberculosis of that viscus has been successfully done by J. L. Stretton (*Lancet,* July 21, '06). The patient, aged 28, had definite involvement of the right lung with characteristic symptoms. Under ether an incision three inches long was made, with its centre over the third rib, two inches from the sterum. About four inches of this rib was removed. The pleura was found everywhere adherent; the adhesions were loosened carefully with the hand as far as the rib. The portion of the lung above was then surrounded with a serrenœud and cut away, leaving a stump the size of a five shilling piece. For twenty-four hours thereafter the patient was in a state of collapse. During the next few days there was much hemorrhage both from the wound and from the mouth. On the seventh day hemorrhage ceased, but symptoms of sepsis intervened which required a counter opening in the back, through which a large drainage tube was passed. The wire came away on the eighteenth day and recovery was uneventful. The wound was entirely healed three months later. Soon after this all cough and expectoration ceased. The excised portion of the lung was tuberculous and contained a cavity. Six months later the patient was reported well.

Constitutional gout and acute attacks of gout are two essentially different things, declares Roethlisberger (*Jour. A. M. A.*) The uric acid diathesis exists permanently; and on this soil the acute attacks develop. But the latter are infectious and more like acute articular rheumatism. If the big toe happens to be affected we speak of acute gout; otherwise of acute rheumatism. But these acute attacks are identical in nature. Uric acid retention seldom occurs in the young. To the resistance to infections enjoyed by those in and after the prime of life this author attributes the accumulation of immunizing substances within the body. The periodicity of recurrent gout may be due to some transient immunization left from one attack, which dies out in time, leaving the way clear for renewed infection. The necrosis resulting from the compression of the accumulating urates offers a favorable soil for the development of an infectious process, which is certainly indicated in the local phenomena of an acute attack. Some infection, generally autogenous, can generally be learned in the history of a case of gout. Oftentimes the acute attack is preceded by digestive disturbances, catarrhs, bronchitis, influenza, erysipelas, or pneumonia. Not rarely premonitory pains in the limbs, palpitations and the like point to some intestinal or other focus of infection. The germs are not very virulent; nor does such a process result until after the organism has been depressed from some cause. Acute gout develops most in the spring and fall and no doubt bears a relation to the catarrhal affections of the upper air passages frequent during these seasons. Severe purging may bring on gout, probably from some superficial lesion of the intestinal epithelium. Another reason of the infectious nature of acute gout lies in the frequently swollen lymphatics on the affected limb which can sometimes be traced up the leg to the groin, where enlarged glands can be palpated. In treatment the elimination of uric acid should be favored; steps most efficacious in kidney affections should be taken. Search must be made for the focus whence arises the acute infection. Salicylates may be appropriate as antiphlogistics and also as antiseptics, which latter may have to be injected directly into the affected joint. Plenty of water must be taken. This author has successfully used Bier's artificial hyperæmia. The intestinal tract must be disinfected. Natural sulphur waters may be found beneficial; acting as diuretics they are particularly useful in the uric acid diathesis. Sulphur internally is recommended; as also guaiacum and hydrochloric acid. All measures to stimulate metabolism and eliminate urates are indicated.

Echinococcus cyst of the liver with a differential consideration of tumors of this organ is the subject of an important paper by R. T. Fowler (*N. Y. State Jour. Med.,* July, August, '06). The first symptom is the presence of a growth in the liver region or a feeling of pain, discomfort or dragging on the right side. If the tumor is on the superior surface there may be discomfort in breathing. There is regularly enlargement of the organ. Pressure on the neighboring viscera results in symptoms referable to them. There may be interference with the action of the heart and lungs; jaundice; œdema of the lower extremities if the vena cava be compressed; or ascites if the portal vein be compressed. The hydatid fremitus is not obtained very often. Santoni's sign is, if present, most valuable; this is obtained by ausculatory percussion, and consists in the production of a low toned sonorous sound, similar to that obtained by striking a membrane stretched upon a metallic frame. In diagnosing the condition, everything involving a tumor or increase in size of the liver must be taken into account—hepatoptosis, syphilitic cirrhosis, accessory lobes, carcinoma (primary and secondary), sarcoma, angioma, odenoma and abscess. Fowler condemns all procedures involving tapping of the cyst and injection of antiseptics. The only correct operation is hepatotomy (in either one or two stages), evacuation of the contents, and excision of the living membrane.

The cost of medical education in England is computed by *London Standard.* On entering one of the large medical schools in the metropolis the bare fees will amount to £30 per annum, with an addition for the first year of £20 as entrance fee—£170 to cover the five years. In addition there are fees for certain necessary practical classes and material up to fifteen guineas; books, instruments and the like will require £30 more. Forty guineas must be added for examination fees; the official register fee is £5; pocket money and lunches in town mean £30 more annually; clothes, board, lodging, etc., will cost £100 a year. So that if the student is to get through his five years he must expend nearly £900—an equivalent of nearly a thousand dollars a year. There are a great many people absolutely unqualified to practice medicine (such is the state of the law in England, as it is largely with us), who nevertheless escape this expense and labor, and practice as a physician, accepting fees. Such fees, however, cannot be recovered in the courts.

A Sanitary Campaign in Cuba.—The recent little unpleasantness, so typical of Latin communities, bids fair to have one very good result. No doubt the Pearl of the Antilles, while temporarily in the hands of our government, will receive a thoroughly antiseptic housecleaning. Dr. Barnet, chief executive of the

Cuban health department, has been told by Governor Taft to use whatever money is necessary for making Cuba sanitary and stamping out yellow fever. To this end sanitary brigades are being stationed, with ample oiling and disinfecting facilities. There are now three cases of yellow fever in Havana—the only ones on the island. Nor is any epidemic threatened. But precautions are urgently necessary, both on behalf of Cuba and in order that the States may not be visited with an epidemic. The disinfecting force in Havana has been increased from seventy to two hundred men; and its oiling brigade is being increased to a like number. Two hundred men have been set to work at Camp Columbia, quickly and thoroughly to prepare, by disinfection and mosquito extermination, for its occupancy by American troops.

The Hearts of Athletes.—Some comparisons were made at the recent Olympian games respecting the size and stamina of the hearts of the various competitors. The examining physicians examined the hearts of the Germans before the games and premised that they would not be very formidable rivals. The size of their hearts was so abnormally great that in contests requiring strength, energy and endurance it was physicially impossible that they could succeed. The results showed this to be true; the few German athletes who won places were the possessors of small hearts. Most of the hearts of the American athletes were, on the other hand, of smaller dimensions than the smallest heart this examiner had ever measured in a German hospital. An invincible sprinter possessed the smallest heart among the Americans. The English hearts were found to be slightly larger than those of the Americans, but smaller than those of any other nation.

A very mild type of smallpox, seldom resulting fatally, has developed in England, according to official statistics recently published. Until the English law compelling medical men to report all cases, precise statistics as to smallpox among the general population were not available. But in pre-vaccination days the hospital mortality was up to 30 per cent. Until about three years ago, and after the notification act was passed, the deaths were up to 14 per cent. of the cases notified. In 1903, however, the percentage dropped to 5.6, in 1904 to 5.5, in 1905 to 3.2; and apparently it is still going down. In some epidemics, as at Oldham, two types, a severe and a mild, occurred in different series. But the severe type soon died out. The scientific explanation of the mild type is undoubtedly that, in conformity with the rule in all other infections, the virulence becomes attenuated with time.

Major Pilcher recently won the Enno Saunders medal by his prize essay, "The Training of the Medical Officer of the State Forces to Best Qualify Him for Local Service and for Mobilization with National Troops." His essay declared, in part, that even more important than therapeusis is prophylaxis, the latter being perhaps the most difficult duty of the National Guard Surgeon. A single bit of sanitary neglect will open the door for a thousand misfortunes. "The most important study, then, of the physician to whom the duties of military service may come is military hygiene and sanitation." The work of the medical officer of the State forces is more of a novelty to the newly commissioned surgeon than the professional work of the specialist. "He should remember that he is now a military man, and should not fail to qualify himself properly to fill the new position. He must learn to command men, not only those of his hospital corps, but the sick. The title of 'Doc' or 'Doctor' must be absolutely rejected, and he and his men must learn that the military salute and proper deference to rank are essential features of military service."

A Philippine Bureau of Science is a consolidation of the Bureau of Government Laboratories (which has existed for four years) and the Bureau of Mines. The work of the consolidated bureau will cover the investigation of general chemical and biological problems involving bacteriology and immunity; the production, improvement and standardization of sera and prophylactics; pathology; the etiology and treatment of tropical diseases; botany, entomology and a study of the anifauna of the islands and chemical questions relating to their natural products and resources; geology, paleantology, mineralogy, mines and mining engineering. The research work, which formerly was set forth in bulletins, now appears in the excellent monthly *Philippine Journal of Science.*

Nearly a million deaths were due to the plague in India in 1904, states the Sanitary Report just published in England. In every one of the nine years of the present epidemic, save 1900, there has been an increased death rate; in 1904, for instance, there were 251,525 more deaths than in 1903. This epidemic has destroyed more than three and a quarter million lives. The report devotes much space to the measures adopted to check this dreadful disease. Disinfection has been found of little use. The campaign has been directed mainly against the rat. But here the difficulty is enormous, for a religious tenet must be dealt with that forbids the holder to leave an infected place, with a tenderness for animal life that will not sanction the destruction of a deadly serpent, with ignorance that is convinced that plague is introduced and fostered by government in order to reduce the redundant population, with suspicion that sees the disseminating agents in every disinfecting party, or with timidity that may be turned by an ill-considered action into fanatical frenzy. Among the natives there is a higher female death rate than among males; while Europeans, who live in well built, airy houses, are seldom attacked. Dealers in grain are nearly always among the first victims. In one town the rich and the very poor escaped, while the middle classes lost heavily. Wherever the rats were destroyed there was immunity or comparative immunity from the plague.

"Habit spasms" in children are considered in an excellent paper by Still (*Lancet,* Dec. 16, '05), who prefers this term as being more descriptive than "tic." The most frequent form is rapid blinking or a more forcible closure of the eyelids. Next come various movements of the face, most often a twitching of the nose. Head jerking movements were present in one-third of his cases. The limbs were less commonly affected, the upper more frequently than the lower; the commonest movement was a sudden elevation of one or both shoulders. Trunk movements were very uncommon. A form much affected is the frequent repetition of some particular sound such as would be made in clearing the throat, or a more obvious "hem," or some syllable or word which

the child utters in and out of season. These habit spasms may occur singly or in groups, constituting, as it were, a habit clonus. These spasms are limited to different parts at different times; and the tendency is for one form to change into another after a varying period. A useful diagnostic point is the frequent diminution or total cessation of the spasm while the patient is under special observation. Sometimes these habits are associated with psychic disorders. The sexes are almost equally affected; most frequently between the sixth and eighth years (although commonly enough between the fifth and the tenth). Disturbed sleep is very frequent in these children; headaches, enuresis, nervous diarrhœa, stuttering and urticaria were observed; convulsions characterized 7 per cent. Habit spasm is apt to be mistaken for chorea. Treatment requires rest from the worries entailed by school life; the elimination of all sorts of local irritation. Arsenic and bromide mixtures are appropriate; as are sometimes ergot and valerian. Oftentimes a complete change of environment affords the readiest means of cure.

Syphilis and Myopia.—There are two kinds of myopia: one, simple, stationary or slowly progressive until the 25th year; the other, complicated, sometimes called malignant, pathological or inflammatory. Those who are engaged in examining the eyes of school children for errors of refraction should observe this distinction. De Lapersonne (*La Presse Med.*) discusses the many causative factors which obtain in malignant myopia—heredity, age, school work, light, etc. There are both superficial and deep orbital lesions which cause myopia or favor its development. Syphilis should always be borne in mind. Not only should glasses be prescribed, but the general health should also be looked after, with mercurial medication when needed. Perfect correction of any associated astigmatism and rest of the eye are also essential, since the patient is liable at any time to macular hemorrhages or detachment of the retina.

The Sterilization of Tuberculous Sputum.—Kirkland and Patterson describe the method employed in the Brompton Hospital (*Lancet,* Aug. 18, '06). An iron vessel is provided with a movable lid, and has at its bottom two steam jets so arranged that a circular motion is given to the contents. The sputum having been poured into this vessel, the lid is screwed down and steam enters up to a pressure of fifteen pounds; this induces boiling, which is kept up for twenty minues, after which it is allowed to cool to 100° F. It is then emptied into the drain by opening a valve properly arranged at the bottom of the sterilizer. For cleansing the sputum pots a large tank is employed having the necessary valves for admitting water and steam and a valve in the bottom of the tank through which the contents could be emptied into the drain. Inside the tank is a cage which can be raised out of, or lowered into it, at will; this cage is constructed of brass tubes framed and braced together. On the horizontal tubes the sputum cups are suspended by their handles and the covers of the cups are placed in suitable trays provided in the cage. For sterilization and cleaning the cage full of soiled sputum cups and covers is lowered into the tank. Water is admitted into the tank and boiled by the admission of steam; after boiling twenty minutes this water is emptied and the process is repeated. The cage is then raised and the cups and covers are removed. Much less handling of the cups is thus required, and the cleansing of both cups and covers is found to be more thorough than when done by hand. There is also much saving of time which could be devoted to washing handkerchiefs. These are conveyed from the wards in covered pails; and are at once placed in the sterilizing and washing machine. After washing they are taken out and placed in the hydro, which, with the calender, is in a separate room. After being dried in the hydro they are passed through the calender and are then folded and returned to the wards.

Our surgical brethren are doing great things these days if we are to believe everything we read in the lay press. For instance, Prof. Gasse, of Breslau, has been transplanting blood vessels and organs from one body to another. In the case of a four-year-old urchin, parts of his mother's thyroid was transplanted to his spleen. The child, after nine months, is developing, mentally, and can walk and talk. "The operation is simple," the reporter assures us. In another case Gasse removed vessels two and one-half inches long from a live animal and transplanted them, as also blood vessels from animals that had been dead for an hour and a half to living animals. While, in human beings, it is impossible to transplant large blood vessels, they can be taken from freshly amputated limbs and transplanted to subjects from whom large tumors have been removed, or in cases where ligaturing large blood vessels has threatened the parts supplied by them with tissue death. Gasse has also transplanted kidneys from one animal to another, the replanted organ performing its functions perfectly. We await corroboration in the usual professional channels.

The Manhattan Eye, Ear and Throat Hospital recently opened its very imposing new structure in East Sixty-fourth Street, New York City. It is six stories high and occupies five large lots. Its foundation and steel work are capable of supporting a nine story building, and three more stories will ultimately be added. The cost of building, land and equipment is at least $700,000. The west wing contains the wards for the eye patients, and the east for the ear and throat patients. There are sun balconies at the end of each ward for convalescents. The top floor contains the ear and throat operating rooms; also the laboratories for pathological, microscopic, photographic and X-ray work. There are twenty-seven rooms for private patients, for whom a special entrance and elevator are designed. There is a special ward for the treatment of contagious eye diseases; it has its own staff and is cut off from the rest of the building by special doors. Quarters for the nurses are on the top floor.

The tyranny of the young person will have full sway if a lady named Mrs. Ingalls, of Hartford, Conn., succeeds in her purpose. In an address on "anti-narcotics" she declared that "the boy must have a chance" to which end "we must first clear the home of his father's cigar, of his pastor's cigar, of his teacher's cigar, of his big brother's pipe, of his sister's soothing syrup, and of his mother's headache powders." His aunt's cigarette should not be overlooked in this general housecleaning, in which all the world is to be made unhappy in behalf of the small boy. We fear that arch tobacco furnace, Mark Twain, whose rule is never to smoke two cigars at one and the same time, must have set a most

pernicious example to the town of Hartford, in which he lived for many years.

Primary Tuberculous Meningitis.—H. W. Cheney reports in *Pediatrics* the instructive case of a boy aged three, of healthy parentage, but with a family history of tuberculosis. He had had no previous illness. Persistent vomiting was the most marked early symptom. A diagnosis was not positively made until the 15th day, and death resulted on the 24th day. No tubercle bacilli were found in the fluid obtained by lumbar puncture at first, but a guinea-pig inoculated with it died of tuberculosis. The bacilli were found in the cerebrospinal fluid on the 21st day. The brain presented characteristic post mortem changes. The mesenteric and peribronchial glands were microscopically normal, no evidence of tuberculosis was found in any other organ. It is not stated, however, whether the naso-pharynx and middle ears were examined; there might have been tuberculous foci at these sites.

The Treatment of Modern Bullet Wounds.—The *Post-Graduate* recounts an interesting and far-reaching experiment which was performed at the battlefield of Mukden. Out of 100 soldiers wounded in the abdomen, laparatomy was done upon fifty; the other fifty were left alone, with only absolute rest and cleanliness of the external wound. Forty of the cases operated upon died; of the others forty survived. As a result of this experiment laparatomy was afterward hardly ever performed; but strict care was taken that all soldiers wounded in the abdomen had absolute rest for the first three days.

Pulmonary Tuberculosis and Obstetrics.—F. H. Washburn (*Am. Med.*, June, '06) finds that active pulmonary tuberculosis and pregnancy constitute a dangerous complication; that pregnancy exerts an unfavorable influence on the former, both immediately and remotely during the puerperium. Measures should be taken to prevent pregnancy in women actively phthisical. There are occasional indications for interrupting pregnancy in cases of tuberculosis; such cases are best treated in special institutions which should be provided.

Endocarditis.—Beverly Robinson (*Am. Jour. Med. Sc.*) finds that salicin neutralizes the poison of rheumatism, and shortens the disease; he believes that there is no anti-rheumatic remedy so useful and so free from objections. Its use is harmless; therefore it may be persistently given. Thirty grains hourly for eight doses have been given; and subsequently twenty grains every two hours for several days, with appreciable untoward effects. During the acute stages absolute rest is indicated. Robinson has not much faith in external applications, except as an adjuvant to intelligent medication. As a prophylactic measure he would not employ leeches, blisters or even an ice bag, but when acute symptoms supervene hot fomentations are very appropriate. He even insists upon the use of fly blisters over the præcordial region for commencing valvulitis.

The Early Recognition of Mammary Cancer.—Cheatle (*Brit. Med. Jour.*, May 26, '06) gives three most important signs in the early stages: 1. A single tumor; if multiple the case is probably not cancer. 2. Retraction of the skin over the tumor. 3. Flattening of part or all of the curve of the breast over the tumor. Enlarged axillary glands are already evidences of an advanced case; in all suspected cases, however, the axillæ should be examined. If the glands are enlarged on both sides it should argue against cancer. Retraction of the nipple is also a late sign, except when the tumor lies just beneath. Hemorrhage from the nipple on compression of the breast strongly suggests malignancy. If there is doubt an excised piece of the tumor must be examined. In order to prevent dissemination the exploratory operation should be a wide one, including the skin immediately above the tumor, and the fascia beneath.

Headaches Due to Aural Disease.—Hammond, of Boston, declared at the meeting of the American Medical Association that the intimate connection between the innervation of the ear and the central nervous system was clearly established by Zuckerkanel, "and later observation has offered further clinical proof of this relationship." Cerumen oftentimes causes most intense headache (and it is sometimes surprising how upon the instant of its removal both this symptom and deafness are relieved). Children may have persistent headache from slight Eustachian obstruction; and in these cases complete relief generally follows inflation. In the more chronic adhesive processes in the tympanic cavity the subjective symptoms are not always referred definitely to the ear. Fulness in the head, or brain pressure, might be associated with chronic mastoiditis. Headaches may be due to acute otitis media; and these may be relieved by peracentesis. Persistent headaches are caused by chronic suppurations. Exfoliated epithelium and other products of long-continued suppuration collected in the middle ear and mastoid cavities often form masses as large as a peach stone. They might even by pressure necrosis cause absorption of extensive bone areas. Oftentimes an ear that had suppurated at some former time might remain apparently dry for many years, with perhaps occasional crusts. All diseased matter must be removed; in the more advanced cases where the temporal bone is involved, only a radical operation will serve. Cessation of discharge will be followed by relief from headache.

Discarded Street-Cars for the Tuberculous.—The pioneer in the use of "superannuated trolley-cars" is Dr. Peters, of Providence, R. I. Dr. J. J. Walsh describes their use at the Gabriel Sanatorium in the Adirondacks (*International Clinics*). About a dozen old street-cars are here arranged in a large circle, each being fitted up to accommodate one patient. In many ways these cars present an ideal dwelling for those who must live the outdoor life; they have now for two years past given excellent results at Gabriel. They possess some decided advantages. They are cheap; they admit of segregation of patients; they are not damp and draughty across the floor, as are many of the old-fashioned tents. Modern tents, indeed, now closely resemble street-cars in their construction and equipment. The patient may cultivate a small plot of ground near his car if he is to remain during the summer, and this he may decorate as he pleases. The seats are removed; and the interiors are wainscoated as far as the windows. The door toward the north is permanently closed and boarded up. One great advantage of these cars is that they may be thoroughly cleansed and disinfected. They constitute an almost ideal dwelling during the summer months.

MISCELLANY

For cases of collapse a solution of camphor (one part) in ether (six parts) should always be on hand.

The quick-witted Japanese, the Yankees of the Orient, have discovered the profitable possibilities in patent medicines, and are extending their markets for these products in China, Korea, and the South Sea Islands.

Diet of a Child of Four.—An unfortunate and indiscreet child was found upon inquest to have died of ptomaine poisoning after having eaten some hokey pokey, winkles and shrimps and a "vegetable tablet" left as a sample at the house.

A considerate motorist was observed recently by the London *Bystander,* which rightly stated that honor should be paid where honor is due. The motorist in question, on a country road, deliberately avoided running over an animal. To speak precisely, it was a circus elephant.

"Newspaper Doctors."—An Illinois medical society recently decided that the names of members should not be mentioned in connection with medical matters in the daily press; and that, in the event of such notices in the future, the guilty wretch would be haled before the society to explain his most heinous offense.

A journal "by the mad for the mad" has been started by the inmates of the new insane asylum at Maneroeling, which is one of the largest in the world. Its contents are said to be surprisingly like those of most papers. If the alienist was right, who recently announced in a lay magazine that we are all of us more or less insane, such a journal as this should have a very wide circulation.

The poor in French hospitals, states the Paris *Eclair,* are badly received and are questioned in a loud voice in the presence of patients, students and visitors. The modesty of women is not respected. "The poor have the right to demand when they are under examination the observation of the elementary laws of modesty—as also of professional secrecy. The common people fear above everything the hospital."

Chloroform water as a haemostatic has been used by Spaak (*Jour. de Medic.* Sept. 16, '06), who finds it superior to all other styptics. It acts with marvelous rapidity; it has not the slightest disagreeable taste or odor; it is not escharotic; it is cheap, easily obtainable and can be made as required; it is not unpleasant to apply and does not interfere with the surgeon in his operations. Spaak recommends a two per cent. simple solution in water.

A Tuberculosis Exanthem is described by H. Voerner (*Muench. Mediz. Wochenschr.,* Sept. 11, '06) as having occurred in a child four months old, who was suffering from congenital dilitation of the colon and pulmonary tuberculosis. The rash occurred in groups on back, breast and abdomen, it consisted of very soft pin head to pea size nodules of a peculiar dark brown-red color. The microscope showed spindle and plasma cells with a few giant cells; tubercle bacilli could not be found. Infection through the blood is inferred.

How to Make Castor Oil Palatable.—*The Denver Medical Times* counsels admixture with an equal volume of glycerine, and flavoring with a drop of oil of peppermint, anise or cinnamon. The capsules of castor oil are now an excellent method of administration. Where there is no prejudice we suggest putting first about a tablespoonful of whisky in the glass; and then pouring the oil, being careful not to let it touch the sides of the glass, into the midst of the whiskey. Thus may a dose of castor oil be rendered palatable, and even pleasurable.

Yellow glasses for sensitive eyes have been prescribed by Motais for fifteen years past in cases of ultra-sensitiveness to light (*North Am. Jour. Homeopathy*). These glasses are of a yellowish tint, slightly orange, with a brownish tinge on reflection. They increase the perception of light while soothing the eyes. The yellow tint evidently prevents to some extent the passage of the chemical rays. These glasses, declares Motais, are far superior to smoked or blue glasses, while they do not impair the vision. When they are taken off even the most brilliant sunlight seems dead and lifeless in comparison.

The Relation of the Sexual Life to Nervous and Mental Diseases.—In an important paper (*Muench. Mediz. Wochenschr.,* Sept. 11, '06) Aschaffenberg declares that masturbation is never the cause of disease in normal persons. This practice, when excessive and long continued, usually indicates either mental disease or degeneracy. In the constitutionality neurotic it produces symptoms only through the effect on the mind. Chastity of itself produces no harmful effects, but only when the person fears that harm may come from continence. This author expresses sane opinions, which coincide with those of the best physicians who have studied this difficult and very important matter.

A Semmelweis Memorial.—It is stated that a monument is to be erected in Vienna to Ignatz Philipp semmelweis, the founder of the knowledge of the etiology and prophylaxis of child bed fever. In that city this great physician fought for the establishment of the great truths which have resulted in the saving of countless thousands upon thousands of mothers; "and its physicians propose to honor his memory in this manner." Excellent! but does not tradition have it that Semmelweis was, while he lived, one of the most bitterly maligned of men? Is it not even narrated that he was practically hounded to his death by his dear colleagues of the Viennese faculty. Is a monument going to set all that right, now that Semmelweis is dead? Erect one by all means; but it were decidedly worth while that the profession which Semmelweis so well served will in our day most conscientiously determine that such history shall never repeat itself.

The Present Status of Brain Surgery.—M. A. Starr finds (*Jour. A. M. A.,* Sept. 22, '06) that not more than 20 per cent. of cases of epilepsy are suitable for operation, and of those operated upon only 20 per cent. have been permanently cured. As to brain abscess, only 60 per cent. in 500 cases have recovered; with earlier diagnosis a greater proportion should be saved in the future. About 10 per cent. of brain tumors are operable; in 828 operations there were 116 recoveries, 205 cases improved, 186 not improved, 265 died, and in 56 the results were not stated; palliative operations are here justifiable. Cures by trephining are frequent in extradural hemorrhage: in apoplexy, with blood pressure rising to 250 mm. and pulse falling to 50, an operation to relieve pressure may save life; in intracranial hemorrhage of new-born children similar results may be obtained; also in surface hemorrhage from veins developing slowly after an injury. In imbecility no operation has been known to give any mental improvement.

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We have received a copy of the English edition of E. Merck's Annual Report (1905) on the Advancements of Pharmoceutical Chemistry and Therapeutics.

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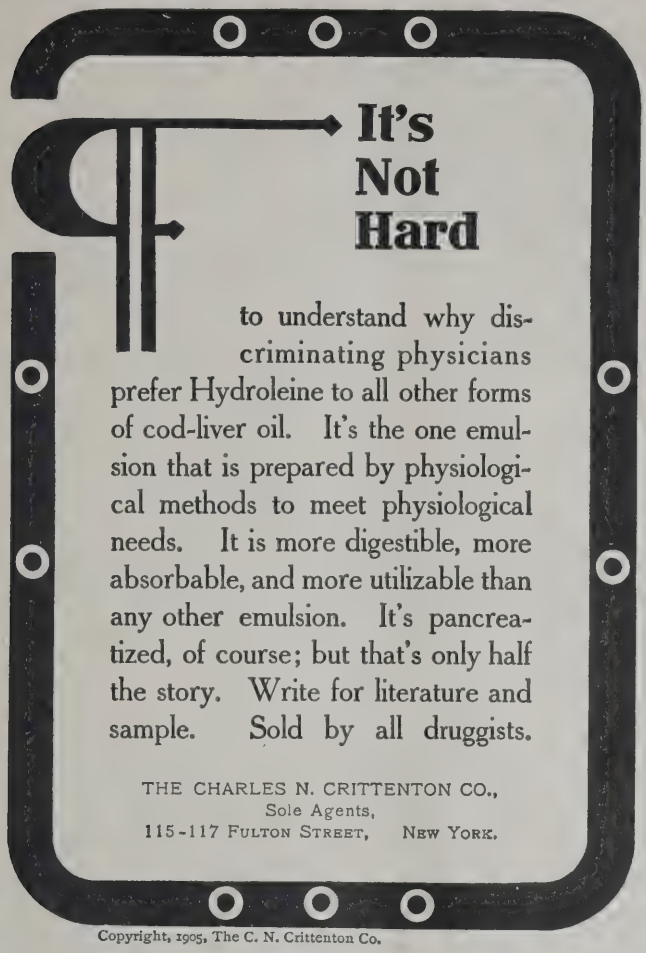
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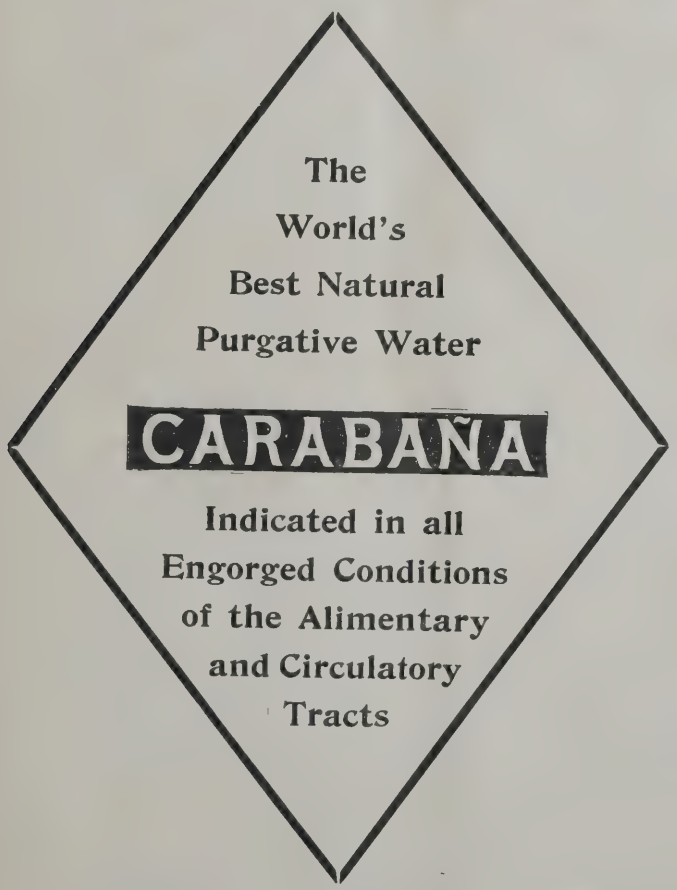
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Citarin in the Uric Acid Diathesis.—Since it has been known that gout depends on the depositon of uric acid, many attempts have been made to find a solvent for this substance. It has been found that formaldehyde forms a compound with uric acid, which is soluble in 300 parts of water, while the acid itself is only soluble in 16,000 parts, and its sodium, salt in 1,130 parts. Allowing formaldehyde to act on the citrate of sodium the anhydro-methylene-citrate of sodium is formed, which has been introduced into therapeutics under the name of citarin. Floret (Deut. Med. Wochensch., January 26, 1905) speaks of this preparation. It is said to be absolutely harmless, to be freely soluble, and to possess, with the addition of a little sugar, a taste like lemonade. Floret has an experience of its action in six cases, and gives the details of each. In each case other remedies were first tried without effect, and in two the diagnosis of gout was only made when it was found that antirheumatic and other remedies proved useless, and that citarin acted promptly. Even in cases of nephrolithiasis, and of extremely chronic gout, the preparation did its work well. He employed it in doses of 2 grams three or four times a day. In conclusion, he recommends its further use on the ground that it acts very completely and quickly, that it is harmless, and that both in acute gout and in the acute exacerbations of chronic gout it may be regarded as the best drug which we possess. —British Medical Journal, April 8, 1905.

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(The late Henry Rutherford Eliot in the November Century.)

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Laugh it off.
Don't make tragedy of trifles,
Don't shoot butterflies with rifles—
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Laugh it off.
Are you near all sorts of brinks?
Laugh it off.
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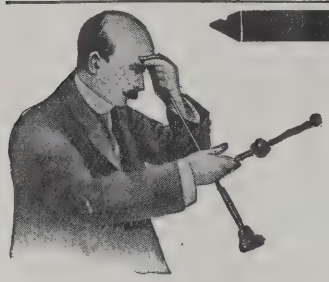

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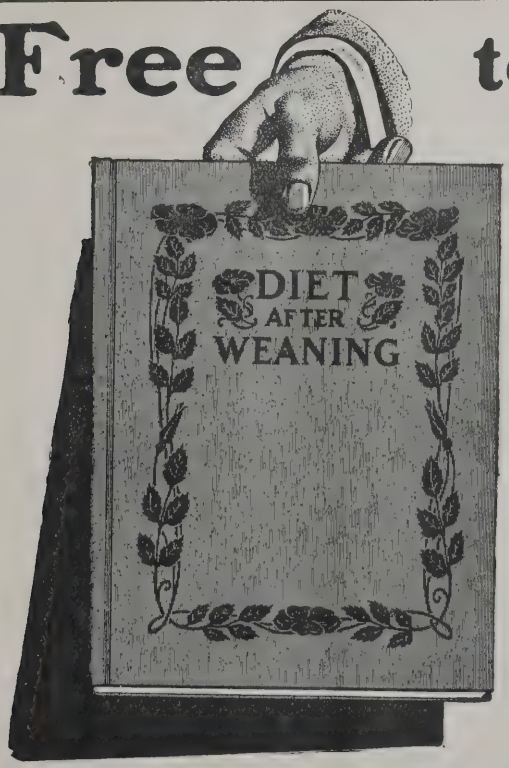

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Treatment of Otorrhœa.—Dr. F. E. Burgevin describes his method as follows: Once daily I fill the ear with a warm solution of some good peroxide of hydrogen, beginning with a 25 per cent. solution, and increasing the strength every day until the pure drug is used. Hydrozone is the same, only twice as strong, and I use it when I can get it simply from motives of economy. After cleansing the ear thoroughly, which at first may require from twenty minutes to two hours, according to the foulness of the auditory canal, I then instill a few drops of Glycozone (warmed) and close the canal securely with a bit of absorbent cotton. This is allowed to remain until the next treatment.

The first cleansing should be very thorough, the peroxide being repeatedly instilled until all foaming ceases. In some cases it may require two, three or more treatments to cleanse the ear properly, especially if the lumen be occluded by a furuncle, or by swelling, or inspissated discharge. Do not be discouraged by any little difficulty like this, keep right on and you will finally succeed in getting the ear clean. After that, it is plain sailing. Thenceforth the daily treatment need not consume more than ten or twenty minutes. It is better to treat the case every day, but I have had good success with patients who could not come oftener than once a week. Do not give the patient medicine to use at home and expect to cure him; and never tell him what you are using.

In children who dread the procedure, I do not attempt much the first time or two, but strive to win their confidence, which is not ordinarily difficult, as the treatment is not at all painful and is always followed by a certain sense of relief, so that children who were in mortal terror of me at first will, after a few treatments, come to me of their own accord. Even babies of one and two years who would not suffer me to touch them at first, after experiencing the grateful relief afforded, will place the head on the chair in the proper position and gladly submit to the treatment.

When the diseased ear has once been thoroughly cleansed I consider my work as half done. Thenceforth improvement is usually very rapid, even old inveterate cases yielding in a few weeks. Relapses occur, but are easily managed, and I have seldom had a second relapse. Of course, mastoid disease, necrosis, polyps, etc., must receive appropriate treatment; but I have no hesitation in saying that all simple, uncomplicated cases (which include the vast majority of all cases under one year's duration) may be cured by this treatment if it is properly and thoroughly carried out.

Care must be taken to have the medicaments warm and not too hot—100 F. is about right—and to always stop up the ear with a bit of aseptic cotton before permitting the patient to leave the office. Be careful to use a piece of cotton of just the right size to securely close up the meatus; if too large it will work out, allowing the solution to escape and leaving the ear unprotected; if too small it will slip back into the canal and so fail of its effect.

Never syringe the ears in otorrhœa; it is risky and useless. I usually drop a little warm solution of sodium borate —5 per cent.—in the ear to prevent a slight stinging which sometimes ensues when active steps are taken. I also dry out the canal with cotton on an applicator, but this should be very carefully done with speculum, and the canal well lighted. These points are non-essentials, merely refinements which render the treatment a trifle more pleasant, perhaps; that is about all.

We have received for review from W. B. Saunders Company, publishers, the first volume of the latest great work on the Practice of Surgery. It is edited by the eminent surgeon, Dr. W. W. Keen, and the contributors are men of the highest standing.

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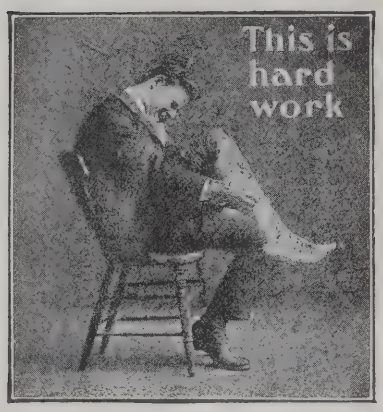

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SELECTIONS

Thermovibrassage.—This is the name given by F. W. Hitchings, Cleveland, Ohio (Journal A. M. A., October 27), to the combination of mechanical vibration and heat, either moist or dry, instead of vibration alone in the treatment of conditions in which the latter is employed. He accomplishes this by the insertion of a resistance coil into the same space ordinarily occupied by a ball vibratode. The coil is in a metal case and screws on to the shaft like an ordinary vibratode, and by a switch arrangement the current can only pass through the coil when the vibrator is running and the heat switch turned on, thus preventing danger of overheating. Turning on the heat switch for thirty seconds and then turning it off will give a temperature of 108° F., which is usually a suitable one for therapeutic use and one which can be borne with comfort, either dry or through a moist cloth, if moist heat is desired. Of course, the vibrator continues to vibrate whether the heat is on or off. He reports a case of neuralgia that was relieved by this application and mentions a number of conditions in which he has used this method to advantage, including sprains, bruises, torticollis, the pain of flat-foot and that of rheumatoid arthritis.

Sodium Citrate as a Modifier of Cow's Milk.—The chemical action of sodium citrate as a modifier of cow's milk is discussed at some length by J. W. England, Philadelphia (Journal A. M. A., October 20), who gives it as his opinion that sodium citrate, which is a neutral salt, has no decomposing action on casein calcium in the cold, and that, when the citrated milk is brought in contact with the gastric juice, the sodium citrate is decomposed into sodium chlorid and free citric acid; and that the sodium chlorid has more important physical and chemical properties in the digestion of cow's milk than has hitherto been suspected. He considers it very doubtful whether the free citric acid has any more important therapeutic value than the hydrochloric acid of the gastric juice stimulated in production by the presence of the sodium chlorid. The article is illustrated.

Publicity as a Factor in Venereal Prophylaxis.—P. A. Morrow, New York (Jour. A. M. A., October 20), declares that the concealment of facts regarding venereal diseases is a factor in perpetuating the evils attending them. The value of publicity in the suppression of evils has been amply demonstrated of late, but the venereal evil furnishes the most conspicuous example of an evil that flourishes in darkness and owes its power for mischief to the obscurity to which it has been relegated by traditional prejudice. Publicity here is desirable, he says, and is absolutely indispensible to the success of plans for prophylaxis. To the question, is publicity practicable, he answers that it is, and that the sentiment that forbids the open discussion of the subject has no place in the counsels of preventive medicine. Though the newspapers are not available, physicians can work with tracts, pamphlets, conferences, lectures, meetings of medical societies to which the public is invited. Another valuable agency would be a journal of popular medicine, devoted to the study and prevention of all communicable diseases, especially those spread in the ordinary relations of social life. Such a one has already been projected. He believes the present a favorable time to dispel the indifference of the public regarding this evil and to bring about reform.

Length of Sentences.—"The English sentence grows shorter and shorter," said an essayist (Phila. Bulletin). "Spenser, Sir Thomas More, Lyly, and Sydney used sentences of the average length of fifty-five words. Nowadays the sentences of the average journalist are only fifteen words long.

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New York

SELECTIONS

Digitalis and Strophanthus Compared.—At a stated meeting of the New York Academy of Medicine, Oct. 16, 1906, a valuable paper on the "Comparative Action of Digitalis and Strophanthus" was read by Dr. A. Hatcher. Some of the chief points developed by the writer were that in all probability strophanthus would never rival digitalis; that the insolubility of digitoxin was against its use; that digitalin in large doses was rapidly excreted by the kidneys. In the discussion following the presentation of Dr. Hatcher's paper, Dr. H. P. Loomis remarked that strophanthus was used comparatively little to-day as compared with ten or fifteen years ago, and he expressed the belief that strophanthus would never take the place of digitalis. Dr. Theodore Janeway, in participating in the discussion, believed digitalis to be the mainstay in cardiac therapeutics.

The discussion in its entirety followed a trend familiar to those who have carefully studied the therapy of digitalis. That is, there were statements indicative of confidence in the ultimate physiological action of digitalis, but these statements were usually coupled with others regarding unreliability in effect and slowness in action of digitalis in its older forms.

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